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A STUDY OF OFF-FARM AGRICULTURAL OCCUPATIONS IN NEW YORK STATE.

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THE STUDY ATTEMPTED TO DETERMINE (1) WHAT THE OFF-FARM AGRICULTURAL OCCUPATIONS WERE, (2) THE PROPORTION OF TIME DEVOTED TO USE OF AGRICULTURAL COMPETENCIES IN THESE OCCUPATIONS, (3) THE NUMBER OF PERSONS EMPLOYED IN SUCH OCCUPATIONS, (4) THE LEVELS OF EMPLOYMENT IN WHICH OCCUPATIONS ARE FOUND, (5) THE OUTLOOK FOR EMPLOYMENT OPPORTUNITIES IN THESE JOBS, (6) THE AGRICULTURAL COMPETENCIES NEEDED BY THE WORKERS, AND (7) THE EDUCATIONAL REQUIREMENTS FOR SUCH OCCUPATIONS. A STRATIFIED-RANDOM SAMPLE OF THE POPULATION INCLUDED 16 OF THE 230 SCHOOL DISTRICTS IN NEW YORK STATE OFFERING INSTRUCTION IN AGRICULTURE DURING THE SCHOOL YEAR 1963-64 AND TWO SELECTED SCHOOL DISTRICTS OUT OF SEVERAL LOCATED IN THE ADIRONDACK AREA. A TOTAL OF 541 BUSINESSES OR SERVICES IN THE 16 SCHOOL DISTRICTS AND 53 BUSINESSES IN THE ADIRONDACK AREA WERE INTERVIEWED. SOME CONCLUSIONS WERE--(1) OFF-FARM AGRICULTURAL OCCUPATIONS WERE CONCENTRATED MOST HEAVILY IN SERVICE AND RETAIL SALES, (2) AN ESTIMATED 28,685 FULL-TIME AND 16,841 PART-TIME WORKERS WERE EMPLOYED IN OFF-FARM AGRICULTURAL OCCUPATIONS IN THE 260 SCHOOL DISTRICTS, (3) EMPLOYERS' ESTIMATES INDICATED A GROWTH RATE OF 19 PERCENT FOR FULL-TIME WORKERS AND 13 PERCENT FOR PART-TIME WORKERS BETWEEN 1964 AND 1969, AND (4) A HIGH SCHOOL EDUCATION WAS SUFFICIENT FOR FULL-TIME WORKERS IN THE VAST MAJORITY OF OCCUPATIONS. RECOMMENDATIONS FOR FURTHER RESEARCH ARE INCLUDED. (PS)

A STUDY OF

OFF-FARM AGRICULTURAL OCCUPATIONS IN NEW YORK STATE

by

HAROLD R. CUSHMAN VIRGIL E. CHRISTENSEN GARRY R. BICE

A Cooperative Research Project of

The Agricultural Education Division
Rural Education Department
New York State College of Agriculture
Cornell University
Ithaca, New York

Bureau of Agricultural Education The State Education Department Albany 1, New York

Contributing Boards of Education and Boards of Cooperative Educational Services in New York State

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January 1965

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE OFFICE OF EDUCATION

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A STUDY OF OFF-FARM AGRICULTURAL OCCUPATIONS IN NEW YORK STATE

Harold R. Cushman, Virgil E. Christensen and Garry R. Bice

INTRODUCTION

Importance of the Study

The traditional purpose of vocational education in agriculture has been ... "To meet the needs of persons over fourteen years of age who have entered upon or who are preparing to enter upon the work of the farm ... "1/ In recent years, a number of trends have taken place in agriculture and rural life which have had significant implications for persons charged with responsibility for teaching, administering or preparing teachers for vocational agriculture programs. Some of these trends are:

- 1. A change from generalized to more highly specialized types of agriculture.
- 2. A shift of less productive land out of farming and into forestry and out-door recreation uses.
- 3. The transfer of many processing, manufacturing and marketing functions, formerly performed by the farmer on the farm, to specialized businesses at off-farm locations.
- 4. The rapid mechanization of agriculture and the growth of a large sales and service industry in farm machinery and equipment.
- 5. A profound increase in service occupations meeting the specialized needs of farmers for feed, seed, fertilizer, spray, artificial breeding, record keeping, etc.
- 6. The growth of residential and suburban areas with an ensuing demand for the products and services of ornamental horticulture, floriculture and landscaping.

As a result of such trends, the 88th Congress specified in the Vocational Education Act of 1963 that ... "any amounts allotted ... for agriculture may be used for vocational education in any occupation involving knowledge and skills in agricultural subjects, whether or not such occupations involve work of the farm ..." 2/ The passage of this act and the

^{2/}Committee on Labor and Public Welfare, United States Senate, Selected Education Acts of 1963, (Washington, D. C.: U. S. Government Printing Office, 1963), pp. 75-76.



^{1/}Administration of Vocational Education, Vocational Education Bulletin No. 1, General Series No. 1, U. S. Department of Health, Education and Welfare, (Washington: Government Printing Office, 1958), p. 27.

appropriation of funds to implement its provisions have created a critical need for detailed information concerning the nature and extent of off-farm agricultural occupations in New York as a basis for:

- 1. Determining content for training and re-training programs which will prepare youth and adults for employment in such occupations and upgrade the performance of persons already employed;
- 2. Formulating and trying out such training programs in various organizational and administrative settings;
- 3. Determining the sort of physical plant which will be most conducive to efficient learning;
- 4. Guiding students in exploring career opportunities in such occupations;
- 5. Guiding students in evaluating their own capabilities against the requirements of off-farm agricultural occupations;
- 6. Planning programs for the preparation of teachers for the new programs;
- 7. Allocating funds from the Vocational Education Act of 1963 to support needed training programs, and
- 8. Developing programs of administration and supervision for the emerging programs.

From the pursuit of such concerns as the above must come many of the guidelines for vocational agriculture in a new era; one in which preparation for the broad spectrum of agricultural occupations will have replaced preparation for farming as the guiding purpose.

Previous Work Contributing to this Study

In a 1961 study of 17 occupations related to farming in the Syracuse economic area, Tom 3/, Hill and Greene found 152 annual entry opportunities. Employers expressed a preference for employees with a high school education, training in vocational agriculture and farm experience.

Early in 1963 a committee of the Joint Staff of Supervisors and Teacher Trainers in Agricultural Education consisting of Dr. Joe P. Bail, Agricultural Education Division, Cornell University and Mr. Everett Lattimer, Bureau of Agricultural Education, State Education Department,



^{3/} Frederick K. T. Tom, Charles W. Hill and Kingsley L. Greene, Employment Opportunities in Certain Occupations Related to Farming in the Syracuse, New York Economic Area, (Ithaca: Cornell University, 1961), 27 pp.

assumed leadership for developing a procedure and survey forms for studying the broad complex of off-farm agricultural occupations and coperating with Dr. Duane Nielsen, Specialist in Teacher Education and Research, Agricultural Education Branch, U. S. Office of Education in his efforts to encourage and coordinate research efforts in this area of concern.

With several states planning extensive studies of employment opportunities and needed competencies in off-farm agricultural occupations during the spring of 1963 it became apparent that several benefits would accrue from a conference jointly sponsored by the National Center for Advanced Study and Research in Agricultural Education and the Agricultural Education Branch of the U. S. Office of Education to further develop and coordinate studies in this vital area. Accordingly plans were developed early in the spring of 1963 for a three-day Research Coordination Conference to be held on the campus of the Ohio State University, May 27, 28 and 29. The broad purposes of this meeting were:

- "1. To maximize the possibilities for coordinating and achieving commonality in the agricultural occupations studies being conducted by the several states without violating the integrity of individual state studies;
 - 2. To provide other states with resulting materials and encourage comparable studies;
 - 3. To provide opportunity for individual states to benefit from the experience of others in further developing and refining their proposals." 4/

Participants attended from 14 states. Eail and Lattimer represented New York.

At the 53rd Annual Professional Conference held at Harpur College, June 25-28, 1963, Bail and Lattimer presented a proposed procedure and survey forms for conducting local studies to determine employment opportunities in off-farm agricultural occupations.

Price 5/ in a field test of the proposed procedure in the Wayland Central School district during the fall of 1963 discovered 53 companies employing a total of 248 persons in occupations requiring agricultural competencies. The distribution of these persons by level of employment was 72 semi-skilled, 63 skilled, 51 proprietors and managers, 29 clerical and sales, 17 supervisors and foremen, 10 technical, 4 professional and 2 unclassified. The functions performed by the 248 persons classified as follows: 88 sales, 76 services, 50 processing, 32 manufacturing and two marketing. Several suggestions were made for persons conducting such studies in the future:

^{5/}John E. Price. (Preliminary data for Master's essay, Cornell University, Ithaca, 1963).



^{4/}Report of Research Coordination Conference on Agricultural Occupations, (Columbus: The Ohio State University, 1963), 92 pp.

- 1. Many businesses and services of a non-agricultural nature employ workers needing agricultural competencies. Such businesses and services must be included in the study population for off-farm agricultural occupations studies if the results are to be complete.
- 2. The yellow pages of the telephone directory, knowledgeable local businessmen and the members of the local agricultural advisory board are reliable sources for identifying the businesses and services in a given area who employ persons needing agricultural competencies.
- 3. Terms such as agricultural competencies, job titles, level of employment and main function of business are not a part of the business man's vocabulary. Such terms must be defined and illustrated in a consistent manner during interviews if survey results are to be reliable.
- 4. The <u>same</u> agricultural competencies are usually useful for entry, needed on the job and a factor in advancement. Efforts to have employers differentiate competencies on such bases proved costly in time and, in general, unrewarding.
- 5. The original list of agricultural competencies based on an analysis of farming should be expanded by adding competencies drawn from analyses of ornamental horticulture; agricultural machinery sales and service; forestry; conservation and outdoor recreation, and agricultural business.
- 6. A standardized system is needed for classifying job titles in off-farm agricultural occupations.
- 7. Special training for interviewers and an interviewers manual will be essential for standardizing interviewing procedures in studies where more than one interviewer is involved.
- 8. The data from such studies is complex and detailed. Machine processing will be essential to efficient use of time in summarizing results.
- 9. The public relations implications of such studies should be recognized by teachers interviewing employers within their school district.

The Problem

This study was a cooperative effort to identify and to obtain first-hand information concerning the off-farm agricultural occupations in the school districts offering instruction in agriculture in the State of New York and in two school districts within the Adirondack area. The Agricultural Education Division of the Rural Education Department at Cornell University; the Bureau of Agricultural Education, State Education Department, and Boards of Cooperative Educational Services in representative school districts worked together to this end. The main questions to which answers were sought were:



- 1. What are the off-farm agricultural occupations?
- 2. What proportion of time is devoted to use of agricultural competencies in off-farm agricultural occupations?
- 3. How many persons are employed in such occupations?
- 4. At what levels of employment are such occupations found?
- 5. What is the outlook for employment opportunities in these jobs?
- 6. What agricultural competencies are needed by workers in off-farm agricultural occupations?
- 7. What are the educational requirements for such occupations?

Assumptions

The following assumptions were made in planning and carrying out this study:

- 1. That type of farming area, school enrollment and tax base of school district could logically constitute the primary factors to be considered in selecting a representative sample of school districts offering instruction in agriculture.
- 2. That even a limited sampling of two school districts in the Adirondack area might provide reasonably valid and useful occupational information; particularly as it applied to the forestry and soil conservation and wildlife and recreation occupational families.
- 3. That identification of school district boundaries, use of the yellow pages classification guide and the yellow pages of area telephone books, personal contacts with local persons judged to be knowledgeable concerning businesses or services in their school district and review by the local Agricultural Advisory Board would result in identification of the "population" of businesses and services having proprietors and/or employees needing agricultural competencies in a local school district.
- 4. That comparable interview procedures would be followed by teachers of agriculture who had been instructed in the use of the interviewer's manual and interview schedules.
- 5. That the job titles of all off-farm agricultural occupations would be found in the <u>Dictionary of Occupational Titles</u> 6/; usually under headings other than agriculture.

^{6/}Dictionary of Occupational Titles, Definition of Titles, Volume I, (Washington: Government Printing Office, 1949).



- 6. That off-farm agricultural occupations would occur at all levels of employment.
- 7. That reliable information concerning off-farm agricultural occupations could be obtained from employers.

Scope and Limitations of the Study

The recognized study limitations were:

- 1. A "population" consisting of those school districts in New York offering instruction in agriculture during the school year 1963-64;
- 2. A stratified-random sample of the population composed of 16 of the 260 school districts in the population;
- 3. A sampling of but two selected school districts out of several located in the Adirondack area;
- 4. All information was obtained from employers; no employees were interviewed.

Operational Definitions

The following definitions were employed in this study:

- 1. An <u>agricultural occupation</u> is one in which the workers need competencies in one or more of the primary areas of plant science, animal science, agricultural business and agricultural mechanization.
- 2. Competency ability.
- 3. Main function of business or service the specific operation performed and the main contribution made to society by the business or service.
 - (a) Retail Sales The selling of goods or property for money, usually directly to the consumer or his agent.
 - (b) <u>Service</u> The installation, maintenance or repair of an article, applicance, machine, convenience, or other property or things; also the performance of specialized tasks essential to production.
 - (c) <u>Manufacturing or Processing</u> The production of goods by hand, by special methods or by industrial art or processes; to work into useful form.
 - (d) Education The teaching, instruction or training of an individual in either formal or informal settings.
 - (e) Wholesaling The purchase and/or sale of goods in large bulk or quantity, often to a buyer who plans to resell at retail.
 - (f) Specialized Agricultural Production The growing of plants and animals at off-farm locations.
 - (g) Recreation Refreshment of body and mind, but generally both; diversion; amusement; any pleasurable exercise.



4. Levels of employment 7/.

(a) Professional -

(1) Professional jobs usually require a high degree of mental activity by the worker and are concerned with theoretical or practical aspects of complex fields of human endeavor. A minimum of a college degree or experience of such character and scope to provide equivalent background is required.

(2) Examples: 4-H Club Agent, veterinarian, forester.

(b) Managerial -

(1) Managerial jobs are involved with responsibility for policy-making, planning, supervising; coordinating, or guiding the work activity of others, usually through intermediate supervisors.

(2) Examples: Manager of agricultural sales and service business, manager of milk processing plant, greenhouse manager.

[NOTE: Foremen that have limited responsibility for policy-making and management are not included. They are classified with the skilled occupations.]

(c) Technical -

(1) This group of occupations requires somewhat similar education and/or experience to the professional occupations. These fields of work, however, are less demanding with respect to background or the need for initiative or judgement than those fields which are considered as "professional."

(2) Examples: Artificial inseminator, dairy herd improvement

supervisor, laboratory technician.

(d) Clerical -

- (1) This group of occupations includes jobs dealing with the proparation, transcribing, transferring, systematizing, or preserving of written communications and records in offices, shops, etc.
- (2) Examples: Bookkeeper, camp clerk, rural bank teller.

(e) <u>Sales</u> -

- (1) Included in this group are occupations concerned with the sale of commodities, investments, real estate and occupations closely related to sales work.
- (2) Examples: Salesman, rural insurance representative, auctioneer.

(f) Service -

- (1) Included in this group are occupations concerned with the welfare and personal needs of people on a non-professional basis.
- (2) Examples: Guide, dude ranch riding instructor.

7/Ibid., adapted from Volume II, Occupational Outlook Handbook.



(g) Skilled -

- (1) This group includes craft and manual jobs and the workers must have a thorough knowledge of the processes involved in their work. They exercise considerable independent judgement and often need a high degree of manual dexterity. In some instances they are responsible for valuable equipment or products. Workers in skilled occupations usually become qualified by serving apprenticeships or completing extensive training programs.
- (2) Examples: Poultry sexer, cheese maker, lumber grader.

(h) Semi-skilled -

(1) This group of manual jobs is characterized by one, or a combination of the following requirements: The worker must exercise manipulative ability of a high order, but it is limited to a fairly well-defined work routine. Major reliance is not so much upon the worker's judgement and dexterity but upon vigilance and alertness. Any exercise of independent judgement to meet variables in the work situation is not based on a wide knowledge of the job field and the nature and extent of the judgements are limited either by application over a relatively narrow task situation or by having important decisions made by others.

(2) New employees in semi-skilled jobs are required only to be physically able to perform the work. At the beginning they are not expected to be highly proficient but after a short training period they must work at a standard, fast and steady pace.

- (3) Truck drivers are the largest single group of semi-skilled workers. Many semi-skilled employees work as helpers or assistants to skilled workers. They often repeat the same motions or the same jobs throughout the day. In general, semi-skilled workers work with their hands.
- (4) Other examples: Log scaler, meat cutter, heavy equipment operator.

(i) <u>Unskilled</u> -

- (1) This group includes manual occupations that involve the performance of simple duties that may be learned within a short time period and that require little or no independent judgement.
- (2) Frequently, these jobs involve handling or moving objects or materials, e.g., loading or unloading, digging, shoveling, hauling, hoisting, wrapping and mixing. Some of these unskilled jobs require heavy physical work.
- (3) Examples: Golf course laborer, nursery laborer, custodian, pulp cutter.
- 5. No operational definition of a full-time or part-time employee was established. This differentiation was left to the judgement of the persons interviewed.



Procedures Used

1. Selection of the study population.

The 260 school districts in New York State offering instruction in agriculture during the school year 1963-64 were selected as the study population. It was assumed that school districts representative of this group would be willing to cooperate in the study by making available the services of their teachers of agriculture to collect local data. The main disadvantage of this choice of population was that it would not allow generalization of the results to the state as a whole. The geographical distribution of the school districts included in the population is shown in Figure 1.

2. Sampling procedures.

A stratified-random sample of school districts offering instruction in agriculture was selected using the following procedures:

(a) Each of the 260 school districts was assigned a number.

(b) The 260 school districts were then sorted according to the types of farming area 8/in which they were located; dairy, general farming,

poultry, vegetables and fruit.

(c) The median for "K-12 school population" and the median for "full value of taxable real property per resident child in weighted average daily attendance" were obtained from the State Education Department for the school districts offering agricultural instruction in each type of farming area.

(d) The school districts in each type of farming area were placed in one

of four categories:

(1) Above median in "K-12 school population" and above median in "full value ..."

(2) Above median in "K-12 school population" and below median in "full value ..."

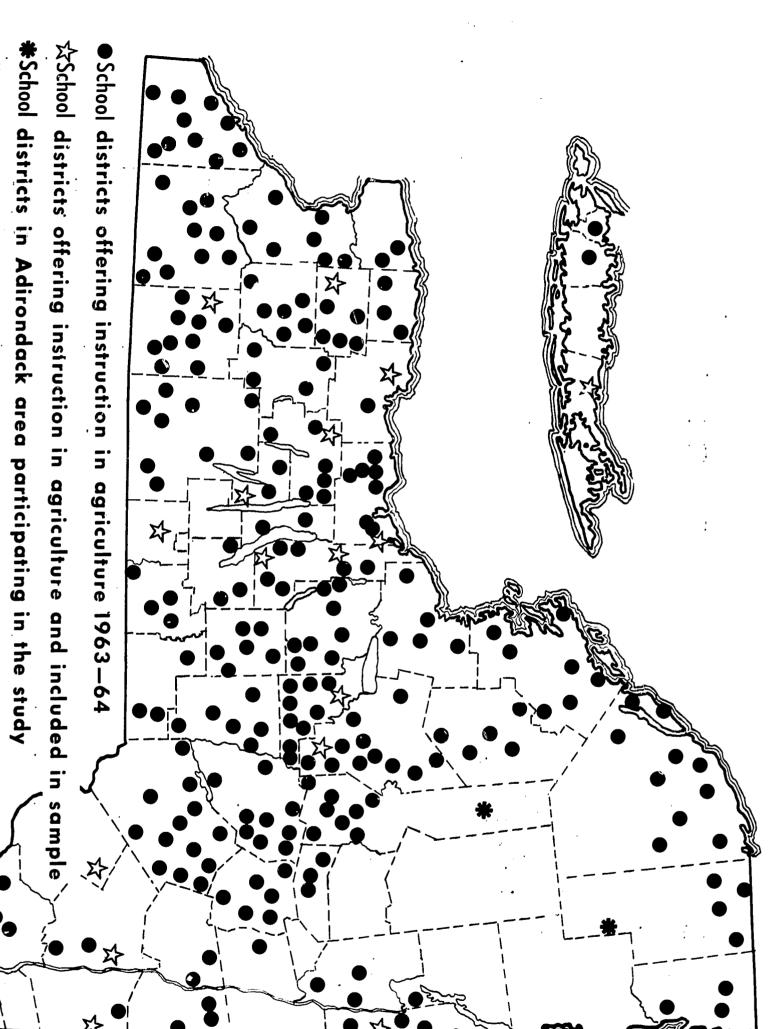
(3) Below median in "K-12 school population" and above median in "full value ..."

(4) Below median in "K-12 school population" and below median in "full value ..."

(e) Using a random numbers table, one school district was selected at random from those within each of the four categories (in [d] above) for each of the types of farming. A first alternative and a second alternative were also drawn.



^{8/}Feuer, Lowe, Hartwig and Peech, New York Agriculture At A Glance, (Ithaca: New York State College of Agriculture, 1963), 16 pp.



ERIC Paul Part Provided by ERIC

GEOGRAPHICAL DISTRIBUTION OF SCHOOL DISTRICTS IN THE STUDY POPULATION

FIGURE 1

- (f) The school administrators of the selected school districts (or in some cases the administrator of the Board of Cooperative Educational Services) were contacted by the Bureau of Agricultural Education to obtain permission for the teacher of agriculture to devote 20 working days to participation in the study. The administrators of alternate schools were contacted where circumstances made this procedure necessary. Following this procedure, cooperation was obtained from 16 school districts.
- (g) A sample of two districts was selected in the Adirondack area on the basis that the districts were somewhat representative of the major conservation activities including forest management, wildlife management and outdoor recreation. A member of the faculty of each of the two school districts was employed to conduct interviews.
- 3. Development of interview schedules and interviewers manual.

The proposed procedure and survey forms developed by Bail and Lattimer were revised using: Price's <u>9</u>/experience with these materials in his census of the Wayland Central School District; lists of agricultural competencies developed by committees of the "Joint Staff of Supervisors and Teacher Trainers in Agricultural Education" from analyses of ornamental horticulture, agricultural machinery sales and service, forestry, conservation, outdoor recreation and agricultural business; recommendations previously made by various committees at the Research Coordination Conference held on the campus of Ohio State University, May 27, 28, and 29, 1963, and the coding recommendations of the Cornell Computing Center.

Following critical review of the tentative interview schedules and interviewer's manual by several members of the Division of Agricultural Education at Cornell University and the Bureau of Agricultural Education, State Education Department, an extensive field test was conducted at Red Creek Central School District. Experience gained in the try-out under field conditions, additional critical review by professional colleagues and experience gained in coding the results of the field test at Red Creek were all employed in the final revision of the interview schedules, Appendix A, and the interviewer's manual. 10/

4. Training of interviewers.

A four-hour orientation meeting was held by the project staff with participating teachers on Tuesday, June 30, 1964, during the Annual Professional Conference at Farmingdale Agricultural and Technical Institute. The following agenda was followed:

10/Interviewers Reference Manual - A Study of Off-Farm Agricultural Occupations in New York State, Mimeograph, (Ithaca: Cornell University, 1964), 23 pp.



^{9/}Price, op. cit.

- (a) Plans for the Study (60 minutes)
- (b) Instructions for Using the Yellow Pages Classification Guide (30 minutes)
- (c) Instructions for Completing the Interview Schedules (60 minutes)
- (d) Guides for Interviewing (30 minutes)
- (e) Practice in Completing the Interview Schedules (60 minutes)

Each teacher was instructed to:

- (a) Plot the boundaries of the school district on a large scale map.
- (b) Compile a list of businesses and services within the school district that might have employees needing agricultural competencies using: the "yellow pages classification guide" and the yellow pages of the telephone books for the area, personal contacts with a minimum of three knowledgeable persons and the assistance of the agricultural advisory board.
- (c) Arrange and conduct interviews with the owner-operator, manager, personnel director or other representatives of each business or service on the list compiled. Interviewers not in attendance at the Farmingdale meeting were instructed individually by the Coordinator of Field Interviewers.

5. Collection of data.

A majority of the interviews were completed during July and August; the remainder were carried out in September and October, 1964. The Coordinator of Field Interviewers visited each interviewer during July and made additional visits to lend assistance as requested in August.

A noteworthy aspect of this study was that the decision as to whether or not a given business or service had employees needing agricultural competencies was left, by the interviewers, to the judgement of the employer.

6. Number and function of businesses studied.

A total of 541 businesses or services were studied in the sample drawn from the 260 school districts, offering instruction in agriculture during the school year 1963-64. TABLE I. Of these 155 (29 per cent) were located in dairy farming areas, 77 (14 per cent) were located in fruit farming areas, 176 (33 per cent) were in poultry farming areas, 61 (11 per cent) were in vegetable farming areas and the remaining 72 (13 per cent) were in general farming areas.

The distribution of the 541 businesses or services by main functions was as follows: service 40 per cent, retail sales 35 per cent, manufacturing eight per cent, wholesaling six per cent, specialized agricultural production (other than farming) four per cent, recreation four per cent and education three per cent.



TABLE I

NUMBER AND MAIN FUNCTION OF BUSINESSES OR SERVICES
STUDIED

| Number of businesses or | | | | | | | | | |
|-------------------------|----------------------------|----------------------|---------|-------------------------------|-----------|-------------|---------------------------------------------|------------|--------|
| • | | services by function | | | | | | | |
| Type of farming area | Number of school districts | Retail sales | Service | Manufacturing & processing | Education | Wholesaling | Specialized agricultural production * | Recreation | Totals |
| Dairy | 4 | 55 | 67 | 11 | 8 | 4 | 7 | 3 | 155 |
| Fruit | 3 | 32 | 33 | .6 | | 3 | _ | 3 | 77 |
| Poultry | 3 | 60 | 67 | 15 | 7 | 9 | 9 | 9 | 176 |
| Vegetable | 3_ | <u>16</u> | 22 | 6 | 2 | 9 | 4 | 2 | 61 |
| General | 3 | 25 | 29 | 6 | 2 | 6 | 1 | 3 | 72 |
| Sub-total | 16 | 188 | 218 | 44 | 19 | 31 | 21 | 20 | 541 |
| Per cent of 541 | | _35 | 40 | 8 | 3 | 6 | 4 | 4 | 100 |
| Adirondack areas | 2 | 10 | 21 | | 5 | | 3 | 14 | 53 |
| Per cent of 53 | - | 19 | 40 | | 9 | | 6 | 26 | 100 |

^{*} Other than farming



An additional 53 businesses or services were studied in two school districts in the Adirondacks.

7. Treatment of data.

The facilities and equipment of the Cornell Computing Center were used throughout the several stages of data processing. As completed interview schedules were received from the field, the data were coded and punched on I. B. M. cards following the format shown in APPENDIX B. The 083 Sorter, 101 Electronic Statistical Computer and the 407 Tabulator were utilized at appropriate stages in processing the data.

The steps employed in compiling several of the tables are described in APPENDIX C.

FINDINGS

A. OFF-FARM AGRICULTURAL OCCUPATIONS IN THE 260 SCHOOL DISTRICTS OFFERING INSTRUCTION IN AGRICULTURE DURING 1963-64

Job Titles of Off-Farm Agricultural Occupations and Proportion of Time Typical Workers Spend on Use of Agricultural Competencies

A total of 213 differenct job titles of off-farm agricultural occupations were found in the 16 school districts surveyed. All except eight of the job titles were subsequently located in the <u>Dictionary of Occupational Titles</u>. 11/ The 213 job titles are listed below by occupational family; in the order by which they were coded for data processing. In each case the job title is preceded by the appropriate D. O. T. Code Number (if located) and followed by the proportion of time which employers reported that a typical worker in this job title spent on tasks requiring agricultural competencies.

Per Cent of Time

100

60

36

100

| D. O. T. Number | Job Titles by Occupational Families | Workers Use Agricultural Competencies |
|----------------------------|-------------------------------------|---------------------------------------------|
| AGRICULTUF | RAL MACHINERY SALES AND S | SERVICE |
| 0 - 72.71 | Manager | 9 8 |
| 0 - 72.71 | Assistant Manager | 97 |
| 1 - 86.16 | Salesman | 67 |
| 0 - 91.80 | Fieldman | 100 |
| 1 - 01.02 | Bookkeeper | 76 |
| 1 - 70.10 | Sales Clerk | 100 |
| 7 - 36 .2 50 | Truck Driver | 94 |
| 0 - 87.10 | Custodian | 70 |
| 0 - 97.67 | Parts Manager | 91 |
| 0 - 97.67 | Parts Helper | 95 |
| 5 - 92.711 | Foreman | 74 |
| 3 - 35.10 | Mechanic | 80 |
| 3 - 35 . 10 | Mechanic's Helper | 96 |
| O - 97.45 | Branch Manager | 10 0 |

Shop Foreman

Serviceman

Machinist

Combination Welder



5 - 83.641

4 - 85.040

4 - 75.010

5 - 92.711

^{11/}Dictionary of Occupational Titles, Definition of Titles, loc. cit.

Per Cent of Time Workers Use Agricultural Competencies

Job Titles by Occupational

D. O. T. Number Families

AGRICULTURAL SUPPLIES AND EQUIPMENT

| 0 - 72.71 0 - 72.71 1 - 86.16 0 - 91.80 1 - 01.02 1 - 70.10 7 - 36.250 | Manager Assistant Manager Salesman Fieldman Bookkeeper Sales Clerk Truck Driver | 86 74 62 90 78 49 52 |
|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|----------------------------------------|
| 5 - 83.641 | Serviceman | 80 |
| 4 - 07.100 | Miller | 64 |
| 6 - 07.400 | Roll Tender (grinder man) | 3 3 |
| 9 - 59.02 | Yardman (building materials) | 68 |
| 5 - 25.110 | Carpenter | 96 |
| 9 - 88.40 | Stockboy (general helper) | 15 |
| 0 - 97.61 | Sales Manager | 100 |
| 5 - 91.031 | Foreman | 85 |
| 5 - 83.621 | Maintenance Man | 97 |
| 0 - 97.51 | Manager, Production | 60 |
| 5 - 23.910 | Operating E ngi neer | 76 |
| 9 - 32,01 | Laborer | 100 |
| 5 - 25.150 | Finish Carpenter | 100 |
| 5 - 91.031 | Warehouse Foreman (grain and feed mill) | 6 8 |
| 9 - 88.40 | Warehouse Man | 54 |
| 0 - 74.13 | Dep a rtment Manager (buyer assistant) | 6 <u>0</u> |
| 3 - 35.10 | Mechanic | 100 |
| 6 - 78.145 | Screw Machine Operator | 75 |
| 4 - 33.914 | Millman Woodwork | 84 |
| 4 - 97.010 | Electrician | 100 |
| 4 - 85.040 | Combination Welder | 100 |
| 5 - 23.910 | Heavy Equipment Operator | 100 |
| 5 - 24.010 | Bricklayer | 20 |
| 5 - 30.210 | Plumber | 97 |
| 0 - 97.67 | Parts Manager | 90 |

DAIRY MANUFACTURING AND PROCESSING

| 0 - 72.71 | Manager | 89 |
|------------|-------------------|-----|
| 0 - 72.71 | Assistant Manager | 68 |
| 1 - 86.16 | Salesman | 100 |
| 1 - 48.24 | Fieldman | 95 |
| 1 - 01.02 | Bookkeeper | 100 |
| 7 - 36.250 | Truck Driver | 62 |
| 0 - 87: 10 | Custodian | 50 |



| D. O. T. Number | Job Titles by Occupational Families | Per Cent of Time Workers Use Agricultural Competencies |
|---------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| 0 - 50.46 4 - 06.010 4 - 06.410 4 - 06.570 8 - 06.51 | Laboratory Technician Ice Cream Maker Cheese Maker Pasteurizer Milk Plant Laborer | 95 80 100 50 74 |
| 5 - 91.001 0 - 01.20 5 - 83.611 6 - 06.560 6 - 06.510 3 - 35.10 | Foreman Accountant (general) Maintenance Man Milk Inspector Condenserman Mechanic | 100 100 95 100 70 80 |
| LIVESTO | CK MARKETING AND PROCES | SING . |
| 0 - 72.71 1 - 86.16 1 - 01.02 | Manager Salesman Bookkeeper | 92 84 73 |
| 1 - 70.10 7 - 36.250 0 - 91.80 0 - 91.80 | Sales Clerk Truck Driver Buyer Dealer | 50 20 40 25 |
| 1 - 51.10 4 - 09.205 5 - 58.100 9 - 88.40 0 - 97.01 9 - 88.40 | Auctioneer Butcher Meat Cutter Warehouseman President Stock Tender | 93 80 83 75 66 50 |
| OTT | HER LIVESTOCK INDUSTRY | |
| 0 - 72.71 1 - 01.02 0 - 34.10 0 - 34.10 0 - 50,46 5 - 86.515 3 - 07.70 5 - 91.001 9 - 88.40 | Manager Bookkeeper Veterinarian Veterinarian's Assistant Laboratory Technician Laboratory Chief Beekeeper Foreman Stock Tender | 100 60 77 100 100 100 100 90 |
| | POULTRY INDUSTRY | • |
| 0 - 72.71 7 - 36.250 3 - 08.10 3 - 48.03 3 - 41.10 | Manager Truck Driver Debeaker Sexer Incubator Specialist | 100 40 100 60 80 |



Per Cent of Time

| D. O. T. Number | Job Titles by Occupational Families | Workers Use Agricultural Competencies |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| CROPS I | MARKETING AND PROCESSING | |
| 0 - 72.71 0 - 72.71 1 - 86.16 1 - 48.27 1 - 01.02 7 - 36.250 8 - 04.10 3 - 16.20 6 - 04.570 0 - 97.51 5 - 91.021 3 - 35.10 9 - 88.01 5 - 91.021 3 - 37.20 | Manager Assistant Manager Salesman Fieldman Bookkeeper Truck Driver Packer Harvest Hand Grader Superintendent (factory) Warehouse Foreman Mechanic Truck Loader Foreman Group Leader (crew boss) | 78 100 100 93 87 83 83 100 40 80 90 85 50 95 100 |
| FORES | STRY AND SOIL CONSERVATION | |
| 0 - 68.26 5 - 91.401 0 - 35.03 0 - 35.01 5 - 91.401 5 - 97.901 | Fire Warden Lumberman Soil Conservation Technician Agronomist Hook Tender (logger) Foreman | 100 88 90 90 50 100 |
| 7713 | LDLIFE AND RECREATION | , |
| (Not found in D. O. 7 7 - 61,110 0 - 27.08 (Not found in D. O. 7 9 - 61.11 3 - 40.03 3 - 40.07 (Not found in D. O. 7 (Not found in D. O. 7 1 - 86.43 0 - 88.24 | Park Caretaker Youth Camp Director Camp Operator Camp Grounds Caretaker Golf Course Greens Keeper Golf Course Laborer | 94 70 80 |

| D. O. T. Number | Job Titles by Occupational Families | Per Cent of Time Workers Use Agricultural Competencies |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| 5 - 83.621 0 - 27.08 0 - 27.40 2 - 61.11 5 - 23.910 5 - 99.030 2 - 05.01 9 - 61.11 3 - 40.04 | Maintenance Man Camp Director Camp Counselor Lifeguard Heavy Equipment Operator Foreman (government service) Camp Cook Park Laborer Groundskeeper | 100 63 100 100 60 85 50 50 85 |
| ORN. | AMENTAL HORTICULTURE | |
| 3 - 38.20 3 - 38.20 1 - 86.16 1 - 01.02 1 - 36.250 3 - 39.10 3 - 38.20 3 - 38.10 3 - 39.30 3 - 40.04 3 - 40.12 3 - 40.13 0 - 35.05 3 - 40.06 0 - 03.20 5 - 97.901 9 - 61.11 3 - 38.20 3 - 39.10 | Manager Assistant Manager Salesman Bookkeeper Sales Clerk Truck Driver Nurseryman Flower Raiser Nursery Laborer Gardener Lawn Keeper Tree Sprayer Pruner Arborist Landscape Gardener Landscape Architect Landscape Foreman Park Laborer Greenhouse Florist Greehouse Laborer FARM SERVICE | 88 100 75 75 90 70 70 97 100 80 80 50 20 50 75 65 95 100 50 42 |
| 3 - 48.94 (Not found in D. O. T.) 0 - 50.45 | Dairy Herd Improvement Super | 82 100 - 98 |
| 0 - 72.71 4 - 85.040 7 - 36.250 1 - 01.02 | visor Manager Combination Welder Truck Driver Bookkeeper | 95 82 75 60 |

| and the second s | | Per Cent of Time |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------------|
| D. O. T. Number | Job Titles by Occupational Families | Workers Use Agricultural Competencies |
| | | |
| . AC | GRICULTURAL SERVICE | |
| 0 - 12.20 | County Agricultural Agent | 100 |
| 0 - 12.20 | County 4-H Club Agent | 100 |
| 0 - 31,01 | Teacher of Agriculture | 82 |
| 0 - 06.71 | Agricultural Journalist | 93 |
| (Not found in D. O. T.) | Agricultural Representative for Power Company | r 90 |
| 1 - 57.10 | Rural Insurance Representativ | re 51 |
| 1 - 48.52 | Rural Real Estate Representat | ive 64 |
| 1 - 48.52 | Appraiser | 73 |
| (Not found in D. O. T.) | General Repairman | 80 |
| 5 - 81.510 | Auto Body Man | 91 |
| 3 - 35.10 | Mechanic | 57 |
| 0 - 44.26 | Advertising Layout Man | 100 |
| 1 - 05.01 | General Office Clerk | 100 |
| 1 - 48.25 | Credit Checker | 52 |
| 0 - 87.10 | Custodian | 97 |
| 5 - 23.910 | Heavy Equipment Operator | 82 |
| 8 - 94.34 | Laborer | 64 |
| 5 - 30.210 | Plumber | . 97 |
| 0 - 72.71 | Manager | 76 |
| 0 - 97.02 | Vice-President | 97 |
| 0 - 97.12 | Office Manager | . 53 |
| 0 - 85.10 | Credit Manager | .83 |
| 0 - 01.20 5 - 83.611 | General Accountant | . 15 |
| | Maintenance Man | 73 50 |
| 7 - 96 . 100 | Foreman | 59 |
| 5 - 27 . 010 | Plumber Apprentice Painter | 100 -92 |
| 5 - 25.110 | Carpenter | 92 89 |
| 1 - 51.10. | Auctioneer | 84 · |
| | Truck Driver | 80 |
| 1 - 01.02 | Bookkeeper | 100 |
| 0 - 12.30 | Home Demonstration Agent | 100 |
| 5 - 99.050 | Utilities and Maintenace Forer | |
| 1 - 01.52 | Cashier (bank) | 92 · |
| 4 - 97.010 | Electrician | 100 |
| 3 - 07.10 | Horse Breeder | 100 |
| 0 - 95.18 | Inspector (government service | |
| 6 - 06.560 | Milk Inspector | 80 |
| 5 - 75.232 | Water Well Driller | . 67 |
| | Plant Superinten dent | 100 |
| | Sales Clerk | 25 |
| 1 - 37.12 | Stenographer | 50 |
| 9 - 32.61 | Whitewasher | 75 |
| 0 - 64.10 | Surveyor | .80 |



Proportion of Time Devoted to Use of Agricultural Competencies in Twelve Families of Off-Farm Agricultural Occupations

Based on employers' estimates, workers in the 213 off-farm agricultural occupations spent an average of 83 per cent of their work time on tasks requiring agricultural competencies. TABLE II. However, the proportion of time thus spent varied from 15 per cent for some job titles to 100 per cent for others.

Projected Number of Persons Employed During 1964 in Off-Farm Agricultural Occupations in 260 New York School Districts Offering Instruction in Agriculture in 1963-64

It was estimated the 28,685 persons were employed full-time in off-farm agricultural occupations in the 260 New York school districts offering instruction in agriculture during 1963-64. TABLE III. Of this number 8,967 (31 per cent) were employed in 32 job titles in Agricultural Supplies and Equipment, 7,876 (27 per cent) were in 44 job titles in Agricultural Service and 4,879 (17 per cent) were in 18 job titles in Agricultural Machinery Sales and Service.

It was further estimated that an additional 16,841 persons were employed part-time. Of this number 10,769 (64 per cent) were found in 15 job titles in Crops Marketing and Processing, 2,725 (16 per cent) were in 44 job titles in Agricultural Services and 1,085 (six per cent) were employed in 26 job titles in Wildlife and Recreation.

On a per school district basis, it was estimated that there were 110 full-time and 65 part-time workers in off-farm agricultural occupations in a typical New York school district offering agricultural instruction in 1963-64.

Classification of Workers in Off-Farm Agricultural Occupations by Levels of Employment

Employers classified their full-time workers in off-farm agricultural occupations by level of employment as follows: semiskilled 28 per cent, skilled 27 per cent, managerial 15 per cent, sales 13 per cent, clerical four per cent, professional four per cent, unskilled four per cent, technical four per cent, and service one per cent. TABLE IV.

Part-time workers were classified by employers as follows: semi-skilled 76 per cent, sales nine per cent, skilled four per cent, unskilled four per cent, clerical two per cent, managerial two per cent, professional one per cent, technical one per cent and service one per cent. TABLE V. Of the 1161 part-time workers classified as semi-skilled, 1025 (88 per cent) were employed in Crops Marketing and Processing. It was also noted that 119 (88 per cent) of the 136 part-time workers classified in sales were employed in Agricultural Service.



TABLE II PROPORTION OF TIME DEVOTED TO USE OF AGRICULTURAL COMPETENCIES BY FULL-TIME WORKERS IN TWELVE FAMILIES OF OFF-FARM AGRICULTURAL OCCUPATIONS

| | Occupational Families | Number of different job titles | Range <u>1</u> / (in ' per cent) | Mean 2/(in per cent) |
|--------------------------|---------------------------------------------|--------------------------------|-------------------------------------|----------------------|
| 1. | Agricultural Machinery Sales and Service | 18 | 36-100 | 82 |
| 2. | Agricultural Supplies and Equipment | 32 | 15-100 | 83 |
| 3. | Dairy Manufacturing and Processing | 18 | 50-100 | 78 |
| 4. | Livestock Marketing and Processing | 13 | 20-100 | 81 |
| 5. | Other Livestock Industry | 9 | 60-100 | 7 7 |
| 6. | Poultry Industry | 5 | 40-100 | 93 · |
| | Crops Marketing and Processing | 15 | 40-100 | 82 |
| 8, | Forestry and Soil Conservation | 6 | 50-100 | 88 |
| 9. | Wildlife and Recreation. | 26 | 42-100 | 96 |
| 10. | Ornamental Horticulture | 20 | 20-100 | 80 |
| 11. | Farm Scrytce | 7 | 60-100 | 86 |
| 12, | Agricultural Service | 44 | 15-100 | 83 |
| e. La te de servic | TOTAL | 213 | pen . | - |
| Agrae Tiger of Second | Mean for all workers | . ee | | 83 |



^{1/}Between job titles in each occupational family.
2/Weighted by number of workers in each job title.

TABLE III

PROJECTED NUMBER OF PERSONS EMPLOYED DURING 1964 IN OFF-FARM AGRICULTURAL OCCUPATIONS IN NEW YORK SCHOOL DISTRICTS OFFERING INSTRUCTION IN AGRICULTURE, 1963-64

| | | | Persons employed during 1964 | | | | | | | | |
|-----|--------------------|-------------|------------------------------|----------------|-----------------|-------------|---------------|--------|--|--|--|
| | | Number of | | 'ull-time | <u>art-time</u> | | | | | | |
| | | different | Actual | Projec | cted | Actual Proj | | jected | | | |
| | | job titles | 16 | 260 dis | tricts | 16 | 260 districts | | | | |
| | Occupational | repre- | dis- | Num- | Per | dis- | Num- | Per | | | |
| | Families | sented | tricts | ber | cent | tricts | ber | cent | | | |
| | | | | | | • | | | | | |
| 1. | Agricultural | : | j | | | | į (| | | | |
| | Machinery Sales | | | | | | | | | | |
| | and Service | 18 | 316 | 4 , 879 | 17 | 30 | 425 | 3 | | | |
| 2. | Agricultural | | | į | | | | | | | |
| | Supplies and | | | | . | | -01 | | | | |
| | Equipment | 32 | 764 | 8,967 | 31 | 45 | 594 | 4 | | | |
| 3. | Dairy Manufac- | | | • | i | | | ! | | | |
| | turing and | | | , <u> </u> | | | | | | | |
| | Processing | 18 | 178 | 1,581 | 6 | 2 | 19 | | | | |
| 4. | Livestock Mar- | | | | | | | | | | |
| | keting and | | | | | | | | | | |
| | Processing | 13 | 96 | 1,282 | 5 | 14 | 345 | 2 | | | |
| 5. | Other Livestock | | | | _ | | | | | | |
| | Industry | 9 | 28 | 852 | 3 | 2 | 48 | _ | | | |
| 6. | Poultry Indus- | | _ | , | • | _ | | | | | |
| | try | 5 | 3 | 10 | - | 5 | 17 | - | | | |
| 7. | Crops Market- | | | ! | í | • | | | | | |
| | ing and | | | · · | : | | 10.700 | | | | |
| | Processing | 15 | 176 | , 990 | 3 | 1,052 | 10,769 | 64 | | | |
| 8. | Forestry and | | | Í | ! | | | | | | |
| | Soil Conser- | | | 1.50 | • 1 | 10 | 101 | | | | |
| • | vation | 6 | 11 | 179 | 1 | 18 | 101 | 1 | | | |
| 9. | | 0.0 | 00 | | | | 1 005 | 6 | | | |
| 4.0 | Recreation | 26 | 62 | 517 | 2 | 83 | 1,085 | 6 | | | |
| 10. | Ornamental | | 1 01 | 0.54 | | . 00 | 700 | | | | |
| | Horticulture | 20 | 131 | 871 | 3 | 82 | 700 | 4 | | | |
| 11. | | | | 001 | | 0 | 10 | | | | |
| 4.0 | Service | 7 | 31 | 681 | 2 | 2 | 13 | - | | | |
| 12. | D | | -14 | | 0.17 | 1.00 | 0.705 | 10 | | | |
| - | Service | 44 | 514 | 7,876 | 27 | 196 | 2,725 | 16 | | | |
| | m-1-1- | 01.0 | 0 010 | 20 805 | 100 | 1,531 | 16,841 | 100 | | | |
| | Totals | 213 | 2,310 | 28,685 | 100 | T, DOT | 10,041 | 1 | | | |
| | Per school distric | ti - | _ | 110 | _ | - | 65 | - | | | |
| | | | | | | | | | | | |



TABLE IV

CLASSIFICATION OF FULL-TIME WORKERS IN OFF-FARM AGRICULTURAL OCCUPATIONS BY LEVELS OF EMPLOYMENT

| بحج | | V | | | | | | | | | |
|-------------|---------------------------------------------|----------------------|------------|-----------|----------|-------|---------|---------|--------------|-------------|------------------|
| | Occupational families | Professi onal | Wanagerial | Technical | Clerical | Sales | Service | Skilled | Semi-skilled | Unskilled | Totals |
| 1. | Agricultural Machinery Sales and Service | fan t | 74 | | 22 | 45 | 2 | 156 | 11 | 6 | ·316 |
| 2. | Agricultural Supplies and Equipment | | 113 | 14 | 26 | 79 | 14 | 169 | 321 | 28 | . 764 |
| 3. | Dairy Manufacturing and Processing | _ | 24 | 14 | 5 | 5 | | 82 | 48 | (200 | ['] 178 |
| 4. | Livestock Marketing and Processing | _ | 12 | | 2 | 17 | - | 33 | 32 | ; | . 96 |
| 5. | Other Livestock Industry | 12 | 3 | 1 | - | - | - | 5 | 7 | - | · 28 |
| 6. | Poultry Industry | - | 3 | | ••• | - | _ | - | | - | . 3 |
| 7. | Crops Marketing and Processing | 1 | 22 | 18 | 6 | - | - | | 105 | 24 | · 176 |
| 8. | Forestry and Soil Conservation | 3 | 5 | P | <u>-</u> | - | _ | 3 | _ | - | 11 |
| 9. | Wildlife and Recreation | 13 | 16 | - | _ | | - | 7 | 22 | 4 | . 62 |
| 10. | Ornamental Horticulture | _ | 33 | 10 | 2 | - | - | 10 | 76 | _ | .131 |
| 11. | Farm Service | - | 2 | 11 | 1 | - | _ | 16 | 1 | - | . 31 |
| 1 <u>2.</u> | Agricultural Service | 60 | 50 | 14 | 33 | 163 | | 139 | 34 | 21 | 514 |
| | Totals | 89 | 357 | 82 | 97 | 309 | 16 | 620 | 657 | 83 | 2,310 |
| | Per cent | 4 | 15 | 4 | 4 | 13 | 1 | 27 | 28 | 4 | 100 |



TABLE V

CLASSIFICATION OF PART-TIME WORKERS IN OFF-FARM
AGRICULTURAL OCCUPATIONS BY LEVELS OF EMPLOYMENT

| | Number of workers classified | | | | | | | | | |
|------------------------------------------------|------------------------------|------------|-------------|----------|-------|------------|---------|--------------|-----------|--------|
| Occupational families | Professional | Managerial | Technical | Clerical | Sales | Service | Skilled | Semi-skilled | Unskilled | |
| 1. Agricultural Machinery Sales and Service | 6 230 | 1 | - | 3 | 3 | 1 | 6 | - | 6 | 30 |
| 2. Agricultural Supplies and Equipment | | 3 | . | 5 | 7 | - | 15 | 13 | 2 | 45 |
| 3. Dairy Manufacturing and Processing | - | - | - | 1 | 1 | | 1 | | | 2 |
| 4. Livestock Marketing and Processing | - | 1 | _ | 5 | 2 | - | 1 | 5 | · • | 14 |
| 5. Other Livestock Industry | - | 1 | : : : | 1 | - | - | - | - | | 2 |
| 6. Poultry Industry | - | - | - | - | - | pra | - | 5 | - | 5. |
| 7. Crops Marketing and Processing | _ | 7 | 4 | 6 | | - | 9 | 1025 | 1 | 1,,052 |
| 8. Forestry and Soil Conservation | - | 3 | - | - | - | 15 | _ | _ | - | 18 |
| 9. Wildlife and Recreation | _ | 8 | 11 | - | 4 | 3 | 14 | 18 | 25 | 83 |
| 10. Ornamental Horticulture | | 6 | - | - | | · - | 5 | 59 | 12 | 82 |
| 11. Farm Service | - | - | -: | - | - | 1 | - | 1 | | 2 |
| 12. Agricultural Service | 5 | 1_ | 3 | 9: | 119 | <u>-</u> - | 6 | 35 | 18 | 196 |
| Totals | 5 | 31 | 18 | 29 | 136 | 20 | 67 | 1161 | 64 | 1,531 |
| Per cent | 1 | 2_ | 1 | 2 | 9. | . 1 | 4 | 76 | 4 | 100 |



Projected Number of Persons Employers Predict Will Be Employed in 1969 in Off-Farm Agricultural Occupations in 260 New York School Districts
Offering Instruction in Agriculture During 1963-64

Based on employers' predictions it was estimated that 34,152 full-time workers will be employed in off-farm agricultural occupations by 1969; compared to 28,685 in 1964. TABLE VI. Of the 34,152 full-time workers it was estimated that 10,289 (30 per cent) would be employed in 32 job titles in Agricultural Supplies and Equipment, 9,630 (28 per cent) would be in 44 job titles in Agricultural Service and 6,181 (18 per cent) would be in 18 Agricultural Machinery Sales and Service job titles.

It was further estimated that an additional 18,950 persons would be employed part-time. Of this number 12,784 (67 per cent), it was estimated, would be in 15 job titles in Crops Marketing and Processing, 2,759 (15 per cent) would be in 44 job titles in Agricultural Service and 1,083 (six per cent) would be in 26 job titles in Wildlife and Recreation.

On a per school district basis it was estimated that by 1969 there would be 131 full-time and 73 part-time workers in off-farm agricultural occupations in a typical New York school district which offered instruction in agriculture during 1963-64.

The estimated increase of 5,467 in full-time workers represented a 19 per cent growth rate over the five-year period. The study further showed that the most rapid rate of growth for full-time workers would take place in Crops Marketing and Processing, 32 per cent; Wildlife and Recreation, 28 per cent, and Agricultural Machinery Sales and Service, 27 per cent.

The estimated increase of 2,109 in part-time workers represented a 13 per cent growth rate over the five-year period. The rapid growth rates predicted in Crops Marketing and Processing, 19 per cent, and . Agricultural Machinery Sales and Service, 17 per cent were also note- worthy.

Employment Opportunities Outlook in Off-Farm Agricultural Occupations in the 260 New York School Districts Offering Instruction in Agriculture During the School Year 1963-64

It was estimated that during the five-year period 1964-69, a total of 24,033 employment opportunities would be available in the off-farm agricultural occupations in the 260 school districts included in the study.

TABLE VII. Of this number 14,085 would be in full-time jobs and 9,948 would be in part-time employment. An individual school district might therefore anticipate 92 employment opportunities over the five-year period; 54 full time and 38 part-time. On a per school district, per year basis the study showed an average of 19 employment opportunities; 11 in full-time and eight in part-time jobs. It should be emphasized that these estimateds did not include those who would enter farming or those who would find employment in off-farm agricultural occupations in urban or other areas outside of the 260 school districts.



TABLE VI

PROJECTED NUMBER OF PERSONS EMPLOYERS PREDICT WILL BE EMPLOYED IN 1969 IN OFF-FARM AGRICULTURAL OCCUPATIONS IN NEW YORK SCHOOL DISTRICTS OFFERING INSTRUCTION IN AGRICULTURE DURING 1963-64

| | | | Predicted employment 1969 | | | | | | | | |
|-----|--------------------|---------|---------------------------|----------------|-------------|--------|-----------|------------|------|-------------|--|
| | | • | | Full-ti | | | Part-time | | | | |
| | • | Number | | • | | | | | | | |
| | Occupational | of dif- | 1 | | | Per | | | | Per | |
| | families | ferent | Act- | Projec | ted | cent | Act- | Project | ted | cent | |
| | | job | ual | 260 | | in- | ual | 260 | | in- | |
| | • | titles | 16 | distric | ts | crease | 16 | distric | ts_' | crease | |
| | | repre- | dis- | Num- | Per | over | dis- | Num-!I | Per | over | |
| | | sented | tricts | ber | cent | 1964 | tricts | ber c | ent | 1964 | |
| | | | | | | t . | ; | | | | |
| 1. | Agricultural | | : ! | , | | | 1 | <u>;</u> ; | İ | | |
| | Machinery and | | • | ! | | 1 | | i . | | | |
| | Sales | 18 | 448 | 6 ,1 81 | 18 | 27 | ; 30 | 497 | 3 | 17 | |
| 2. | Agricultural | | , | | | | 1 | : | . ! | • | |
| | Supplies and | | | 1 | | | | ; , | | | |
| | Equipment | 32 | 836 | 10,289 | 30 | 1.5 | 46· | 524 | 3 | - 12 | |
| 3. | Dairy Manufac- | | ٠ | | | İ | | | ! | | |
| | turing and | | | | | | | , | i | | |
| | Processing | 18 | 189 | 1,692 | 5 | 7 | 2 | 19 | ' | P46 | |
| 4. | Livestock Mar- | | | | 1 | | 1 | | | | |
| - | keting and | | | : | | | ; ; | | i | | |
| | Processing | 13 | 110 | 1,363 | 4 | 6 | 12 | 380 | 2 | 10 | |
| 5. | Other Livestock | 1 | | , | | | | | • | | |
| • | Industry | 9 | 30 | 942 | 3 | 11 | 2 | 48 | 1 | | |
| 6. | Poultry Industry | 5 | 3 | 10 | - | _ | 6 | 20 | : | 18 | |
| | Crops Marketing | | | 1 | | | | | | | |
| | and Processing | 15 | 1 238 | 1,305 | . 4 | 32 | 1,248 | 12,784 | 67 | 19 | |
| 8. | | | 1 | , | i | • | ; | | | | |
| | Conservation | 6 | 11 | 179 | 1 | - | . 3 | 52 | | ~ 50 | |
| 9. | Wildlife and | | | | | ! | | ! | • | | |
| - • | Recreation | 26 | 83 | 660 | 2 | 28 | 96 | 1,083 | 6 | - | |
| 10. | Ornamental | ì | : | • | ! | ľ | 1 | | . | • | |
| • | Horticulture | . 20 | 163 | 1,049 | 3 | 20 | 94 | 751 | 4 | 7 | |
| 11. | Farm Service | 7 | 1 43 | 852 | 2 | 25 | . 8 | 33 | | 153 | |
| 12. | Agricultural | • | 1. | | | | i. | , | | | |
| | Service | 1 44 | 652 | 9,630 | 28 | 22 | 218 | 2,759 | 15 | 1 | |
| | | • | | • | | • | : | | | | |
| | Totals | 213 | 2,806 | ,34, 152 | <u> 100</u> |) : | 1,765 | 18,950 | 100 | | |
| | | | | | 1 | | | 1 1 | | | |
| - | Per school distric | t! - | | 131 | | 1 19 | 1 | 73 | | 13 | |



TABLE VII

EMPLOYMENT OPPORTUNITIES OUTLOOK IN OFF-FARM AGRICULTURAL OCCUPATIONS IN 260 NEW YORK SCHOOL DISTRICTS OFFERING AGRICULTURAL INSTRUCTION, 1963-64

| | | Employment | | | oppo | rtuniti | es by y | rears | | | | |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------|----------|--------------------|----------|---------------|-------|---------------|--------------|-------|--|
| | e de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya della companya della companya de la companya della companya de | 18 | 1965 1966 | | | | 967 | | 68 | 1969 | | |
| | cupational | Full- | Part- | Full- | Part- | Full- | Part- | Full- | Part- | Full- | Part- | |
| <u>fa:</u> | milies | time | t ime | time | time | time | time | time | time | t ime | time | |
| | | ! | | | | : | , | | | · | | |
| 1. | Agricultural | | , | | | i | | | | | | |
| | Machinery | • | 1 | ٠. | | i | | | i | | • | |
| | Sales and | , | | | | | | 1 | | | •• | |
| _ | Service | 533 | 65 | 547 | 66 | 560 | , 68 | 574 | 69 | 588 | 71 | |
| 2. | Agricultural | • | | | | İ | i ! | i | 1 | · | | |
| | Supplies and | | | | | 1 | ! | i | | | | |
| • | Equipment | 754 | 60 | 768 | 59 | 782 | 57 | 796 | 54 | 810 | 53 | |
| 3. | Dairy Manu- | | : | | | | : ! ! | ! | • | ! | | |
| | facturing and | | • | | | | | | : | | | |
| | Processing | 151 | 1 | 152· | 1 | 154 | 1 | 156 | 1 | 158 | . 1 | |
| 4. | Livestock | | | | | <u>.</u> | • | | | | , | |
| | Marketing | | | | | 1 |) : | 4 | : | | | |
| | and Pro- | 77.0 | 10 | | | | i | | | | | |
| E | cessing | 78 | 43 | 79 | 44 | 80 | 45 | 81 | 45 | 82 | 46 | |
| ວ. | Other Live- | | | • | | | ļ | | | | | |
| | stock Indus- | F.O. | | 00 | | | | | " 0 | | | |
| 6 | try | 59 | . 3 | 60 | 3 | 61 | 3 | 61 | 3 | 62 | . 3 | |
| 0. | Poultry | 1 | 2 | | , | | | | · ' | 1 | | |
| 77 | Industry | 1 | 3 | 1 | • 3 | 1 | 3 | 1 | 3 | 1 1 | . 3 | |
| 1. | Crops Mar- | | • | | " | ì | ! | | | | | |
| | keting and | 145 | 962 | 150 | | 155 | 1000 | 100 | 1000 | 105 | 1010 | |
| ρ | Processing Forestry | 140 | 902 | 150 | 982 | 155 | 1002 | 100 | 10 2 2 | 165 | 1042 | |
| ٥. | and Soil | | | er all | ! (<u>.</u> | | | | | | | |
| | Conservation | . 7 | 11. | 7 | 9 | : : 7 | ! 7 | | | | , | |
| 9. | | | 11. | 1 | Э | . 7 | 7 | 7 | 4 | 7 | . 2 | |
| <i>J</i> • | Recreation | 60 | 246 | 62 | 246 | 64. | 246 | 65 | 045 | 67 | 0.45 | |
| 10. | Ornamental | | 21-20 | 02 | _ ∠ 4 0 | 02: | <u> </u> | 65 | 245 | 67 | .245 | |
| 10 | Horticulture | 89 | 158 | 91 | 160 | 93 | 162 | 95 | 161 | 00 | 166 | |
| 11. | Farm | ' | 100 | , 9T | 100 | 95 | 102 | 90 | 164 | 98 | 166 | |
| -11- • | Service. | 69 | 6 | 70 | 6 | 71 | 6 | 73 | 7 | 75 | 7 | |
| 12. | Agricultural | | | 10 | | 1 1 1 | | 73 | , | 10 | / | |
| | Service | 754 | 389 | 771 | 390 | 788 | 391 | 806 | 392 | 823 | 393 | |
| | | 101 | | <u> </u> | . 000 | 700 | 001 | 000 | 092 | 020 | 395 | |
| | Totals | 2700 | 1947 | 2758 | 1969 | 2816 | 1991 | 2875 | 2009 | 2936 | 2032 | |
| | Per school | , | | | | | | 20.13 | | 1 2000 | 2002 | |
| | district | 10.4 | · 7.5 | 10.6 | 7.6 | 10.8 | 7.7.7 | 11.1 | 7.7 | 11.3 | 7.8 | |
| | | | | • | an the first fi | | | | | | | |
| | | | | • | | | | | | | 1 | |
| | | | | | • · | | | | | | • | |
| | | | | | | | | | | | | |



Employment opportunities were highest for full-time workers in the areas of Agricultural Service, Agricultural Supplies and Equipment and Agricultural Machinery Sales and Service. Opportunities for part-time workers were highest in Crops Marketing and Processing, which accounted for more than one-half of such opportunities, Wildlife and Recreation, Agricultural Service and Ornamental Horticulture.

Agricultural Competencies Needel by Workers in Off-Farm Agricultural Occupations

The agricultural competencies cited by employers as most frequently needed by their workers are listed below for each occupational family. They are listed in rank order beginning with the one needed by the highest proportion of full-time workers in each occupational family. Only the top quartile of the rankings are listed below. Complete lists may be found in APPENDIX D.

AGRICULTURAL MACHINERY SALES AND SERVICE

- 1. Display, explain and demonstrate items for sale.
- 2. Order repair parts and new equipment.
- 3. Understand and use credit.
- 4. Make job estimates.
- 5. Sell machinery, equipment, materials, products or supplies.
- 6. Keep, summarize and analyze records.
- 7. Arc or oxy-acetylene welding abilities.
- 8. Operate, maintain and adjust gasoline engines.
- 9. Operate, maintain and adjust tractors, trucks, agricultural equipment and agricultural machinery.
- 10. Knowledge of fuels and lubricants.
- 11. Operate, maintain and adjust diesel engines.

AGRICULTURAL SUPPLIES AND EQUIPMENT

- 1. Operate, maintain and adjust gasoline engines.
- 2. Operate, maintain and adjust diesel engines.
- 3. Install and use materials handling equipment.
- 4. Understand and use credit.
- 5. Knowledge of blueprints, space requirements and building materials for agricultural structures.
- 6. Woodworking and metal working skills.
- 7. Sell machinery, equipment, materials, products or supplies.
- 8. Operate, maintain and adjust tractors, trucks, agricultural equipment and agricultural machinery.
- 9. Investigate and adjust customer complaints.
- 10. Arc or oxy-acetylene welding abilities.
- 11. Make job estimates.
- 12. Display, explain and demonstrate items for sale.
- 13. Order repair parts and new equipment.
- 14. Keep, summarize and analyze records.
- 15. Handle inventories, stock control, warehousing reports, payrolls and accounts.



- 16. Knowledge of fuels and lubricants.
- 17. Call on prospective customers.
- 18. Purchase goods to sell.
- 19. Plan and arrange for advertising and promotion.
- 20. Understand agriculture in our economy.

DAIRY MANUFACTURING AND PROCESSING

- 1. Keep, summarize and analyze records.
- 2. Sanitation and disease control practices.
- 3. Produce high quality products.
- 4. Operate, maintain and adjust tractors, trucks, agricultural equipment and agricultural machinery.
- 5. Ability to test animal products.
- 6. Knowledge of grades and standards.
- 7. Knowledge of blueprints, space requirement and building materials for agricultural structures.
- 8. Handle inventories, stock control, warehousing reports, payrolls, accounts.
- 9. Understand agriculture in our economy.
- 10. Hire, train and supervise workers.
- 11. Order repair parts and new equipment.
- 12. Evaluate the total operation and make decisions.

LIVESTOCK MARKETING AND PROCESSING

- 1. Knowledge of markets and marketing practices.
- 2. Knowledge of grades and standards.
- 3. Sanitation and disease control practices.
- 4. Pasteurize milk.
- 5. Hire, train and supervise workers.
- 6. Understand agriculture in our economy.
- 7. Display, explain and demonstrate items for sale.
- 8. Investigate and adjust customer complaints.
- 9. Comply with local, state and federal government trade and licensing regulations.
- 10. Plan and arrange for advertising and promotion.
- 11. Call on prospective customers.
- 12. Make job estimates.
- 13. Ability to test animal products.

OTHER LIVESTOCK INDUSTRY

- 1. Sanitation and disease control practices.
- 2. Ability to test animal products.
- 3. Produce high quality products.
- 4. Knowledge of grades and standards.
- 5. Keep production, breeding and financial records.
- 6. Knowledge of markets and marketing practices.
- 7. Housing and handling.
- 8. Feeding requirements and practices.



- 9. Use records to improve feeding, breeding and other practices.
- 10. Knowledge of breeding principles and practices.
- 11. Evaluate the total operation and make decisions.
- 12. Hire, train and supervise workers.
- 13. Purchase goods to sell.
- 14. Keep, summarize and analyze records.
- 15. Comply with local, state and federal government trade and licensing regulations.
- 16. Understand agriculture in our economy.

POULTRY INDUSTRY

(Insufficient number of employers interviewed to be significant.)

CROPS MARKETING AND PROCESSING

- 1. Process, grade or package.
- 2. Shipping or storing.
- 3. Operate, maintain and adjust tractors, trucks, agricultural equipment and agricultural machinery.
- 4. Comply with local, state and federal government trade and licensing regulations.
- 5. Understand and use credit.
- 6. Understand agriculture in our economy.
- 7. Use legal instruments: wills, deeds, contracts, mortgages, notes.
- 8. Keep, summarize and analyze records.
- 9. Select seed, cuttings, bulbs or stock plants.
- 10. Sell machinery, equipment, materials, products or supplies.
- 11. Call on prospective customers.
- 12. Investigage and adjust customer complaints.
- 13. Evaluate the total operations and make decisions.

FORESTRY AND SOIL CONSERVATION

- 1. Identify trees of economic importance.
- 2. Fell, trim, skid and haul logs and pulp.
- 3. Operate chain saws and other power equipment.
- 4. Saw, grade, store and haul lumber.
- 5. Lay out, build and open woods roads.
- 6. Select, repair and maintain chain saws.
- 7. Handle inventories, stock control, warehousing reports, payrolls, accounts.
- 8. Hire, train and supervise workers.
- 9. Keep, summarize and analyze records.
- 10. Evaluate the total operation and make decisions.
- 11. Understand agriculture in our economy.
- 12. Identify and control common insects and diseases.
- 13. Arc or oxy-acetylene welding abilities.
- 14. Operate, maintain and adjust gasoline engines.
- 15. Operate, maintain and adjust tractors, trucks, agricultural machinery.
- 16. Farm carpentry.



17. Planning for efficient use of buildings and equipment.

18. Knowledge of paint and painting.

WILDLIFE AND PECREATION

1. Know insurance and safety regulations.

2. Operate turf equipment such as mower, turf, fertilizer spreaders and irrigation equipment.

3. Operate, maintain and adjust gasoline engines.

4. Locate and design drives, walks, fences.

5. Establish lawns.

6. Operate, maintain and adjust tractors, trucks, agricultural equipment and agricultural machinery.

7. Arrange, organize and manage an agricultural shop facility.

8. Manage camp grounds and trailer camps.

9. Knowledge of paint and painting.

10. Correct physical defects of sites being landscaped.

11. Provide for insurance.

12. Control birds and animals injurious to plants.

13. Control insects, diseases and weeds.

14. Prepare seed beds.

15. Plant seeds, bulbs, trees or shrubs.

16. Keep essential records.

17. Know public health laws.

18. Select and buy farm machinery or garden tools, equipment and machinery.

19. Farm carpentry.

20. Concrete, masonry and tile skills.

21. Knowledge of fuels and lubricants.

22. Keep, summarize and analyze records.

23. Use fire fighting tools and equipment.

24. Woodworking or metal working tool skills.

- 25. Knowledge of characteristics and appropriate use of landscaping materials.
- 26. Handle inventories, stock control, warehousing reports, payrolls, accounts.

27. Prepare tax returns.

28. Operate chain saws and other power equipment.

29. Know game laws.

ORNAMENTAL HORTICULTURE

1. Prepare seed beds.

2. Plant seeds, bulbs, trees or shrubs.

3. Perform proper tillage practices.

4. Operate, maintain and adjust gasoline engines.

5. Control insects, diseases and weeds.

6. Operate, maintain and adjust garden machines and equipment.

7. Maintain trees and shrubs.

8. Maintain lawns.

9. Manage nursery, planting, transplanting, pruning, shaping and trimming.

10. Correct physical defects of sites being landscaped.



11. Knowledge of paint and painting.

12. Make lime or fertilizer recommendations.

13. Choose proper planting sites.

14. Operate, maintain and adjust tractors, trucks, agricultural equipment and agricultural machinery.

15. Locate and design drives, walks and fences.

16. Provide seasonal protection to ornamental plants.

17. Decide what to grow.

18. Select varieties.

19. Select seed, cuttings, bulbs or stock plants.

20. Mix soil composites.

21. Knowledge of characteristics and appropriate use of landscaping materials.

22. Select, buy, adjust or maintain lawn and garden sprinkler and irrigation equipment.

FARM SERVICE

1. Investigate and adjust customer complaints. .

2. Operate, maintain and adjust tractors, trucks, agricultural equipment and agricultural machinery.

3. Keep, summarize and analyze records.

4. Woodworking or metal working tool skills.

5. Arc or oxy-acetylene welding abilities.

6. Operate, maintain and adjust gasoline engines.

7. Call on prospective customers.

8. Understand and use credit.

9. Understand agriculture in our economy.

10. Knowledge of blueprints, space requirements, and building materials for agricultural structures.

11. Operate, maintain and adjust garden machines and equipment.

12. Knowledge of paint and painting.

AGRICULTURAL SERVICE

1. Keep, summarize and analyze records.

2. Evaluate the total operation and make decisions.

3. Understand and use credit.

4. Provide for insurance.

5. Investigate and adjust customer complaints.

6. Comply with local, state and federal government trade and licensing regulations.

7. Call on prospective customers.

8. Display, explain and demonstrate items for sale.

9. Use legal instruments: wills, deeds, contracts, mortgages, notes.

10. Understand agriculture in our economy.

- 11. Handle inventories, stock control, warehousing reports, payrolls, accounts.
- 12. Plan and arrange for advertising and promotion.

13. Prepare tax returns.

14. Arc or oxy-acetylene welding abilities.



15. Operate, maintain and adjust tractors, trucks, agricultural equipment and agricultural machinery.

16. Knowledge of fuels and lubricants.

- 17. Operate, maintain and adjust gasoline engines.
- 18. Woodworking or metal working tool skills.

19. Make job estimates.

- 20. Knowledge of paint and painting.
- 21. Hire, train and supervise workers.
- 22. Order repair parts and new equipment.
- 23. Control insects, diseases and weeds.
- 24. Make lime or fertilizer recommendations.
- 25. Choose proper planting sites.
- 26. Know insurance and safety regulations.
- 27. Recommend soil management practices.
- 28. Provide seasonal protection to ornamental plants.
- 29. Prepare seed beds.
- 30. Perform proper tillage practices.
- 31. Select varieties.

Areas of Agricultural Competency Most Needed by Workers in Eleven Occupational Families

Five areas of agricultural competency (namely plant science; forestry, soil conservation and outdoor recreation; agricultural business; agricultural nucchanics, and animal science) were weighted by annual employment opportunities per school district as follows:

- 1. A separate count was made of the number of competencies needed in the area of plant science by 20 per cent or more of the workers in each occupational family, i.e. Agricultural Machinery Sales and Service, Agricultural Supplies and Equipment, etc. (Poultry Industry was not included because of smallness of sample).
- 2. A similar count was made for the areas of forestry, soil conservation and outdoor recreation; agricultural business; agricultural mechanics, and animal science.
- 3. The results were entered in each instance in TABLE VIII under the No. Comp." headings.
- 4. The cells containing numbers were shaded to separate them categorically from other cells.
- 5. The annual (full-time and part-time) employment opportunities per school district per occupational family (in 1969) were entered in the shaded cells under the heading "An. Emp. Op./School."
- 6. The total annual employment opportunities per school district in which workers needed each area of competency was determined by addition and entered under "Total Annual Employment Opportunities Per School Needing Each Area of Competency."



AREAS OF AGRICULTURAL COMPETENCY MOST NEEDED BY MORKERS IN ELEVEN OCCUPATIONAL FAMILIES - WEIGHTED BY ANNUAL EMPLOYMENT OPPORTUNITIES

TABLE VILL

| Animal Science | Agricultural Mechanics | Agricultural Business | Forestry, Soil Con- servation & Outdoor Recreation | Plant Science | Areas of Competency | Occupational Families |
|-------------------|---------------------------|--------------------------|----------------------------------------------------|------------------|---------------------------------------|---------------------------------------|
| | ς. ω | 1: 3 | • | | No.** comp. An. emp. op/scn** | Ag. Mach. |
| | C. | L. L. | · | | comp. An. enp. op/sch | Ag. Sup. & Equip. |
| 7 4 | 2 | 1 | | | No. comp. An. emp. op/sch | Dairy |
| 7 | | * | , | | No. comp. An. erip. op/sch | |
| 122 | | * | | | No. comp. An. emp. op/sch | Other L. Ind. |
| | 5 | 70 | · | 3 5 | No. comp. An. emp. op/sch | Crops M. & P. |
| , | * | 19 | * 25 | * | comp. An. emp. op/sch | For. & |
| | 1 St. | 10 | 17 | 7 2 | No. comp. An. enp. op/sch | Wildlifc & Rec. |
| | 1 1 | 17 1 | | 30 | No. comp. An. emp. op/sch | Orn. Hort. |
| · | 200 | 5 | 2 5 | 20 | Mo. comp. An. emp. op/scn | Ag. Service |
| * | * | 13 | | | No. comp. An. emp. op/sch | Farm Service |
| ⊢ | Ų. | 13 | c . | 12 | per school needing each area of | Totel annual employment opportunities |

^{*}Less than one employment opportunity per school district

***No. comp. = Number of competencies each of which is needed by 20 per cent or more of the workers in this occupational family

***An. emp. op/sch = Annual employment opportunities per school district in this occupational family

Of the 19 annual employment opportunities per school district all were in occupational families where agricultural business competencies were needed, all were in occupational families where agricultural mechanics competencies were needed and 12 were in occupational families where workers needed competencies in plant science. The equivalent of six employment opportunities fell in occupational families needing competencies in forestry, soil conservation and outdoor recreation. One employment opportunity was in occupational families where animal science competencies were needed.

Minimum Education Required for Full-Time Workers in Off-Farm Agricultural Occupations

Employers reported that high school graduation was required for the majority (57 per cent) of full-time workers in off-farm agricultural occupations. TABLE IX. Seventeen per cent were reported to need less than high school education. A similar proportion (18 per cent) were reported to need various levels of education beyond high school.

The 18 per cent of workers in job titles requiring more than a high school education were distributed as follows: post-high school technical education (not a degree), ten per cent; associate or junior college degree, one per cent; some college education (not a degree), three per cent; baccalaureate degree, three per cent, and doctors degree, one per cent.

Employers indicated that level of education was not important for eight per cent of the workers.

B. OFF-FARM AGRICULTURAL OCCUPATIONS IN TWO SCHOOL DISTRICTS IN THE ADIRONDACK AREA, 1964

Job Titles of Off-Farm Agricultural Occupations and Proportion of Time Typical Workers Spend on Use of Agricultural Competencies

A total of 76 different job titles of off-farm agricultural occupations were found in the two school districts surveyed in the Adirondack area. All except seven of the job titles were located in the Dictionary of Occupational Titles. 12/ The 76 job titles are listed below by occupational family; in the order by which they were coded for data processing. In each case the job title is preceded by the D. O. T. Code Number (if located) and followed by the proportion of time which employers reported that a typical worker in this job title spent on tasks requiring agricultural competencies.

12/ Ibid.



MINIMUM EDUCATION REQUIRED FOR FULL-TIME OFF-FARM AGRICULTURAL OCCUPATIONS

TABLE IX

| _ | | Per | .cent | of W | prkers | in o | ccup | ation | al fa | mili | es where |
|-----------|--------------------------------|---------------|--------------|----------|-----------------------------------------------------|-------|--------------|-------------|-----------------|------------|----------|
| | | the | mini | mun | requir | cme | nt is | · | 4 | | |
| | Occupational families | Not important | ion | | Fost-high school technical education (not a degree) | unior | duca rec) | eate | Waster's degree | , – | 1 |
| 1. | Agricultural Ma | | | | | | | | | | |
| 2. | | 2 | 1 | 82 | 15 | | - | - | _ | _ | 100 |
| | Supplies and Equip- | , <u>-</u> | | : | | | | | | | |
| 3. | ment Dairy Manufacturing | 5 | 38 | 54 . | : 2 | ~ | - | 1 | - | | 100 |
| €. | and Processing | 5 44 | 8 | 65 | 27 | | | | | | 100 |
| 4. | Livestock Market- | | | | | ~ | _ | - | - | _ | 100 |
| | ing and Processing | 3 | 28 | 65 | | . 4 | | - | - | p | 100 |
| 5. | Other Livestock | | | | | | | | | | |
| 0 | Industry | - | 25 | 7 | 21 | 4 | 4 | - | - | 39 | .100 |
| 6. | Poultry | | | 0.0 | | | | | | | • |
| 7 | Industry Crong Marketing | - | B ACO | 33 | 67 | | | | - | | 100 |
| 1. | Crops Marketing and Processing | 59 | | 27 | 10 | | • • | 1 1 14 1 11 | | | 100 |
| 8. | Forestry and Soil | שט | ~ | 41 | 13 | | | 1 | | . – | 100 |
| ∵• | Conservation | F 7 | | 27 | 55 | _ | 18 | _ | _ | | 100 |
| 9. | Wildlife and Rec- | | | , | | . – | 10 | | | | 100 |
| | reation | | 10 | 47 | 27 | 2 | 14 | | _ | _ | 100 |
| 10. | Ornamental | | 1 | | | _ | · | | | | |
| | Horticulture . | 2 | 11 | 62 | - | - | 1 | 24 | | - | 100 |
| 11. | | | _ | _ | | | į | Ì | | | |
| 10 | Service | - | 7 | 29 | 64 | ~ | - | | | 9.000 | 100 |
| 12. | Agricultural Service | 5 | <u></u> | E 0 | | _ | | | | · | |
| | Per cent of all | <u> </u> | _5 | 59 | 9 | 5 | 13 | 4 | | | 100 |
| | workers | 8 | 17 | 57 | 10 | 1 | 3 | 3 | | 1 | 100 |
| | | <u></u> | | <u> </u> | | ==== | | | | | 100 |



| | | -00- | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| D. O. T. Num | <u>ber</u> | Job Titles by Occupational Families | Per Cent of Time Workers Use Agricultural Competencies |
| AGR | RICULTURA | L SUPPLIES AND EQUIPMEN | T. |
| 0 - 7 2.71 9 - 32.01 | , | * Manager * Laborer | 100 100 |
| DA: | IRY MANUI | FACTURING AND PROCESSING | 3 . |
| 6 - 06.560 | | * Milk Inspector | .75 |
| : | FCRESTRY | AND SOIL CONSERVATION | • |
| 0 - 35.07 0 - 35.07 0 - 35.03 0 - 68.23 8 - 30.10 3 - 40.16 3 - 40.18 5 - 97.901 7 - 89.121 9 - 61.11 0 - 64.10 9 - 54.20 3 - 40.04 | | Forester Forest Ranger Conservationist * Fire Warden Bush Cutter Tree Trimming Foreman Tree Trimming Groundman * Foreman (agriculture and houlture service) Exterminator Park Laborer Forest Surveyor Laborer Grounds Keeper | 100 90 100 78 75 85 75 100 100 100 100 95 |
| | ORNAM | TENTAL HORTICULTURE | • |
| 3 - 38.20 3 - 38.10 3 - 39.10 | | * Manager* Flower Raiser* Greenhouse Laborer | 100 100 100 |
| | WILDI | LIFE AND RECREATION | • |
| 0 - 68.06 0 - 35.12 0 - 94.94 7 - 61.110 0 - 27.08 (Not found 9 - 61.11 | in D. O. T. | Fish Hatchery Foreman * Wildlife Specialist * Fish and Game Warden * Park Caretaker * Youth Camp Director * Camp Operator * Camp Grounds Caretaker | 100 100 50 100 50 90 |

^{*} Found also in one or more of the school districts offering instruction in agriculture during 1963-64.



| <u>D.</u> | O. T. Number | | | Job Titles by Occupational | Per Cent of Time Wor kers Use Agricultural Competencies |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| | (Not found in D. 3 - 40.03 3 - 40.07 0 - 88.24 (Not found in D. (Not found in D. 0 - 97.12 1 - 05.01 0 - 98.54 1 - 01.53 0 - 98.54 (Not found in D. (Not found in D. (Not found in D. 2 - 40.51 5 - 83.21 0 - 27.08 0 - 27.40 2 - 61.11 2 - 40.26 0 - 35.07 5 - 23.910 0 - 35.07 1 - 37.12 0 - 35.22 9 - 61.11 3 - 97.30 5 - 99.030 | 0. | T.) T.) | Ski Slope Maintenance Man Ski Slope Equipment Operator * Golf Course Greens Keeper * Golf Course Laborer * Marine Engine Mechanic Ski Slope Manager Assistant Camp Operator Office Manager Office Clerk Store Manager Store Cashier * Manager (recreation establishment) Ski Shop Manager Assistant Manager Recreation Facility Attendant * Maintenance Man * Camp Director * Camp Counselor * Lifeguard Boat-Ride Operator Forest Ranger * Heavy Equipment Operator Forester Stenographer Aquatic Biologist Park Laborer Wildlife Trapper * Foreman (government service | 50 50 100 90 50 90 57 99 90 72 75 90 25 93 90 69 90 100 100 100 100 100 100 100 |
| | 0 - 11.10 0 - 11.50 5 - 49.104 1 - 33.01 0 - 98.57 9 - 61.11 7 - 49.101 0 - 66.41 | | | President, Educational Instituti College Professor Lock Tender Secretary Municipal Recreation Executive Laborer, Municipal Service Motorboat Operator Sanitary Technician | • 90 • 50 50 |
| | | A | GR] | CULTURAL SERVICE | • |
| | 0 - 06.71 1 - 57.10 0 - 44.26 1 - 36.02 1 - 05.01 0 - 74.21 0 - 87.10 | | | * Agricultural Journalist * Rural Insurance Representati * Advertising Layout Man Advertising Clerk * General Office Clerk Merchandise Manager (gift shows * Custodian | ve 50 60 50 50 |



| D. O. T. Number | Wo Job Titles by Occupational Ag | r Cent of Time rkers Use ricultural mpetenc ies |
|-------------------|-------------------------------------|-----------------------------------------------------------------|
| 5 - 30.210 | * Plumber | 50 |
| 0 = 72.71 | <u>*</u> Manager | 100 |
| 5 - 83.611 | * Maintenance Man | 100 |
| 4 - 35,720 | Upholsterer | 100 |
| 5 - 99.050 | * Utilities and Maintenace | |
| | Foreman | 90 |
| 2 - 84.10 | Janitor | 100 |
| 0 - 16.01 | Sanitary Engineer | 50 |

Proportion of Time Devoted to Use of Agricultural Competencies in Various Families of Off-Farm Agricultural Occupations

According to employers' estimates, workers in the 76 off-farm agricultural occupations spent an average of 88 per cent of their work time on tasks requiring agricultural competencies. TABLE X. However, the proportion of time thus spent varied from 25 per cent for some job titles to 100 per cent for others.

Number of Persons Employed During 1964 in Off-Farm Agricultural Occupations in Two School Districts in the Adirondack Area

A total of 218 full-time workers in off-farm agricultural occupations were reported by employers interviewed in the two school districts in the Adirondack area. TABLE XI. One hundred and thirteen (52 per cent) were in 43 job titles in Wildlife and Recreation, 41 (19 per cent) were in 13 job titles in Forestry and Soil Conservation, 36 (17 per cent) were in 14 job titles in Agricultural Service and 24 (11 per cent) were in two job titles in Agricultural Supplies and Equipment.

An additional 165 part-time workers in off-farm agricultural occupations were reported by employers interviewed in the two school districts. The vast majority of part-time workers, 148 (90 per cent) were in 43 job titles in Wildlife and Recreation.

On a per school district basis there were 109 full-time and 83 parttime workers in off-farm agricultural occupations in the two school districts studied in the Adirondack area.

Classification of Workers by Levels of Employment

Employers interviewed in the two school districts of the Adirondack area classified their full-time workers in off-farm agricultural occupations by level of employment as follows: semi-skilled 34 per cent; professional and managerial, 17 per cent each; unskilled eight per cent; technical, clerical, service and skilled, six per cent each and sales less than one per cent. TABLE XII.



TABLE X

PROPORTION OF TIME DEVOTED TO USE OF AGRICULTURAL COMPETENCIES BY FULL-TIME WORKERS IN OFF-FARM AGRICULTURAL OCCUPATIONS IN TWO SCHOOL DISTRICTS IN THE ADIRONDACK AREA, 1964

| | | Number of | Range ^l | Mean ² |
|-------------|---------------------------------------------|--------------|---------------------------------------|-------------------|
| | | different | (in per | (in per |
| | Occupational families | job titles ' | cent) | cent) |
| 1. | Agricultural Machinery Sales and Service | - | _ | • - |
| 2. | Agricultural Supplies and Equipment | 2 | 100 | 100 |
| 3. | Dairy Manufacturing and Processing | | 75 | 75 ~ |
| 4. | Livestock Marketing and Processing | _ | | um. |
| 5. | Other Livestock Industry | | · · · · · · · · · · · · · · · · · · · | _ |
| 6. | Poultry Industry | _ | · - | . - |
| 7. | Crops Marketing and Processing | • | ! | - |
| 8. | Forestry and Soil Conservation | 12 | 75-100 | 92 |
| 9. | Wildlife and Recreation | 30 | 25-100 | 87 |
| 10. | Ornamental Horticulture | .3 | 100 | 100 |
| 11. | Farm Service | - | - - | |
| 1 <u>2.</u> | Agricultural Service | 14 | 50-100 | 85 |
| | Totals | 62 | ·- | · - |
| | Mean for all workers | | | 88 |

¹Between job titles in each occupational family ²Weighted by number of workers in each job title



TABLE XI

NUMBER OF PERSONS EMPLOYED IN OFF-FARM AGRICULTURAL OCCUPATIONS IN TWO SCHOOL DISTRICTS IN THE ADIRONDACK AREA, 1964

| The second secon | | | | | |
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---------------------------------------------------------------------------------------------------------------------------------------------------|
| *- | | | | | |
| _ | | | | | |
| • | | | | | |
| families | represented | Number | Per cent | Number | Per,cent |
| : | | • | • | | • • |
| Agricultural | | į | : | | ! |
| Machinery Sales | | | , | t | |
| and Service | i i i i i i i i i i i i i i i i i i i | | | - | _ |
| Agricultural | | | • | | † • • • • • • • • • • • • • • • • • • • |
| Supplies and | | | ; | ' . | |
| Equipment | 2 | 24 | 11 | 1 | - , |
| | 1: | | | | |
| | | | : | | |
| 4 1 | i i · i | 1 | | : 1 | |
| • | _ | | | ! | 1 1 |
| | | | | | |
| • | _ | | <u>.</u> | _ | |
| 1 | | | | 1 | |
| • | _ | _ | | | |
| | | | | | |
| | | _ : | <u>:</u> | <u> </u> | _ |
| • | | ; ; | | <u>, </u> | |
| - , | | | | : | |
| | | | <u>.</u> | i | |
| | | | _ | _ | - |
| | | | | | |
| i . | 1 9 | 41 | 10 | 10 | 7 |
| | 13 | 41 | 19 | 12 | 7 |
| : | 40 | 110 | 50 | 1.40 | 000 |
| • | 43 | 113 | 52 | 148 | 90 |
| · · · · · · · · · · · · · · · · · · · | | | - | | |
| · · | 3 | 3 | .Т | 3 | 2 |
| | | ! | | : | |
| · • | | - | _ | - | - |
| • | | 1 | | | |
| Service | 14 | 36 | 1.7 | 1 1 | 11 |
| | 1 | | · · · · · · · · · · · · · · · · · · · | | 1 |
| <u> </u> | 76 | 218 | 100 | <u> 165</u> | 100 |
| | | | | | |
| er school district | | 1. 109 | <u> </u> | 83 | - |
| | | | i | | |
| · · · · · · · · · · · · · · · · · · · | | | • · · · · · · · · · · · · · · · · · · · | | er de la la la la la la la la la la la la la |
| | | | , | | |
| energy purific and the second | | <u></u> | . | en e e e e e e e e e e e e e e e e e e | |
| | Agricultural Machinery Sales and Service Agricultural Supplies and Equipment Dairy Manufacturing and Processing Livestock Marketing and Processing Other Livestock Industry Poultry Industry Crops Marketing and Processing Forestry and Soil Conservation Wildlife and Recreation Ornamental Horticulture Farm Service Agricultural Service | Agricultural Machinery Sales and Service Agricultural Supplies and Equipment Dairy Manufacturing and Processing I Livestock Marketing and Processing Other Livestock Industry Poultry Industry Crops Marketing and Processing Forestry and Soil Conservation Vildlife and Recreation Ornamental Horticulture Agricultural Service Agricultural Service I Totals Totals Totals Totals | Occupational job titles Full- families represented Number Agricultural Machinery Sales and Service Agricultural Supplies and Equipment 2 24 Dairy Manufacturing and Processing 1 1 Livestock Marketing and Processing | Occupational job titles Full-time families represented Number Per cent Agricultural Machinery Sales and Service | December |

TABLE XII

CLASSIFICATION OF FULL-TIME WORKERS BY LEVELS OF EMPLOYMENT IN OFF-FARM AGRICULTURAL OCCUPATIONS IN TWO SCHOOL DISTRICTS IN THE ADIRONDACK AREA, 1964

| | | Nun | ıber | of wo | orke | rs cl | assif | ied | | |
|------------------------------------------------|--------------|------------|-----------|-------------|-----------|----------|---------|--------------|------------|--------|
| Occup ational families | Professional | Manaqerial | Technical | Clerical, | Sales | Service | Skilled | Semi-skilled | Unskilled | Totals |
| 1. Agricultural Machinery Sales and Service | _ | _ | - | | pos | Bed | - | _ | | |
| 2. Agricultural Supplies and Equipment | _ | 6 | aus | | | - | - | 18 | | 24 |
| 3. Dairy Manufacturing and Processing | 1 | - | - | 1 | ~~ | | - | _ | - | 1. |
| 4. Livestock Marketing and Processing | _ | - | | | ga | - | - | - | - | |
| 5. Other Livestock Industry | | - | - | gua | - | 1 | - | - | - | ~ · |
| 6. Poultry Industry | - | | | - | - | - | _ | _ | - | - |
| 7. Crops Marketing and Processing | - | - | - | - | 1 | - | - | | - | |
| 8. Forestry and Soil Conservation | 10 | 4 | 11 | - | - | - | 2 | 14 | . | 41 |
| 9. Vildlife and Recreation | 22 | 23 | 2 | 9 | | 13 | 6 | 23 | 15 | 113 |
| 10. Ornamental Horticulture | 1 | 1 | - | | - | · | Witas | 1 | P-1 | 3, |
| 11. Farm Service | - | 1 | - | pres | 1 | - | - | | - | g=-4 |
| 12. Agricultural Service | 3 | 4 | - | 3 | 1 | | 4 | 1 <u>8</u> | 3 | 36 |
| Totals | 37 | 38 | 13 | 12 | 1 | 13 | 12 | 74 | 18 | 218 |
| Per cent | 17 | 17 | 6 | 6 | - | 6 | 6 | 34 | 8 | 100 |



Part-time workers were classified by employers as follows: unskilled 30 per cent, service 24 per cent, semi-skilled 18 per cent, skilled nine per cent, clerical seven per cent, technical six per cent, managerial five per cent, and sales one per cent. TABLE XIII.

Number of Persons Employers Predict Will Be Employed in 1969 in Off-Farm Agricultural Occupations in Two School Districts in the Adirondack Area

Employers in the two school districts predicted that they would employ 287 full-time workers in off-farm agricultural occupations by 1969; compared to 218 in 1964. TABLE XIV. Of the 287 full-time workers it was predicted that 146 (51 per cent) would be in 43 job titles in Wildlife and Recreation, 65 (23 per cent) would be in 13 job titles in Forestry and Soil Conservation, 48 (17 per cent) would be in 14 job titles in Agricultural Service and 24 (eight per cent) would be in two job titles in Agricultural Supplies and Equipment.

Employers further predicted that they would employ 211 part-time workers in off-farm agricultural occupations by 1969; compared to 165 in 1964. Of the 211 it was predicted that 185 (88 per cent) would be in 43 job titles in Wildlife and Recreation and 20 (ten per cent) would be in 13 job titles in Forestry and Soil Conservation.

On a per school district basis, it appeared that there would be an average of 144 persons employed full-time and 106 persons employed part-time in off-farm agricultural occupations in 1969 in the two school districts studied in the Adirondack area.

The predicted increase of 69 full-time workers represented a 32 per cent growth rate over the five-year period. The study also indicated that the most rapid rate of growth for full-time workers would take place in Forestry and Soil Conservation (59 per cent), Agricultural Service (33 per cent) and Wildlife and Recreation (29 per cent).

The predicted increase of 46 part-time workers represented a 28 per cent growth rate over the five-year period. The study also revealed that the most rapid rate of growth for part-time workers would take place in Forestry and Conservation (67 per cent).

Employment Opportunities Outlook in Off-Farm Agricultural Occupations in Two School Districts in the Adirondack Area, 1964-69

It was estimated that during the five-year period 1964-69, a total of 314 employment opportunities would be available in the off-farm agricultural occupations in the two school districts. TABLE XV. Of this number, 148 would be in full-time jobs and 166 would be in part-time employment. An individual school district might anticipate 157 employment opportunities over the five-year period; 74 full-time and 83 part-time. On a per school district, per year basis, the study showed an average of 31 employment opportunities; 15 in full-time and 16 in part-time jobs. It should be emphasized that this estimate did not include those who would enter farming or those who would find employment in off-farm agricultural occupations outside of the two school districts.



TABLE XIII

CLASSIFICATION OF PART-TIME WORKERS BY LEVELS OF EMPLOYMENT IN OFF-FARM AGRICULTURAL OCCUPATIONS IN TWO SCHOOL DISTRICTS IN THE ADIRONDACK AREA, 1964

| | | Nur | ŋber | pî w | /qrke | ers c | ląss: | ified | | |
|------------------------------------------------|----------------|------------|----------|------|---------|-------|-------------|--------------|-----------|----------|
| Occupational families | Professional | Manakanial | Toohning | | Ordinal | Dales | מייים אונים | okilled 7 | Unskilled | Totals |
| 1. Agricultural Machinery Sales and Service | _ | - | _ | - | _ | _ | | _ | _ | |
| 2. Agricultural Supplies and Equipment | - | 1 | _ | _ | - | _ | _ | | | . 1 |
| 3. Dairy Manufacturing and Processing | _ | - | _ | _ | | - | - | _ | - | _ |
| 4. Livestock Marketing and Processing | - | | - | | _ | - | _ | | - | - |
| 5. Other Livestock Industry | - | | - | | _ | _ | _ | _ | _ | |
| 6. Poultry Industry | - | - | - | _ | _ | _ | | _ | _ | 1 |
| 7. Crops Marketing and Processing | - | | - | - | - | _ | | _ | - | : - |
| 8. Forestry and Soil Conservation | - | - | - | | - | _ | 2 | 1 | 9 | 12 |
| 9. Wildlife and Recreation | - | 7 | 10 | 10 | 2 | 40 | 13 | 25 | 41 | 148 |
| 10. Ornamental Horticulture | - | - | ca . | 1 | _ | _ | | 3 | - | 3 |
| 11. Farm Service | 91.00 91.00 | - | - | - | _ | _ | _ | _ | _ | *** |
| 1 <u>2. Agricultural Service</u> | | | - | 1 | _ | | - | _ | _ | 1 |
| Totals | _ | 8 | 10 | 11 | 2 | 40 | 15 | 29 | 50 | 165 |
| Per cent | | . 5 | 6 | 7 | 1_ | 24 | 9 | 1 8 | 30 | 100 |



TABLE XIV

NUMBER OF PERSONS EMPLOYERS PREDICT WILL BE EMPLOYED IN 1969 IN OFF-FARM AGRICULTURAL OCCUPATIONS IN TWO SCHOOL DISTRICTS IN THE ADIRONDACK AREA

| | e de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya del companya de la companya del companya de la co | | | | | mployr | | |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-------------|------------------------|------------|------------|----------------|--------------|
| | | 1. | E | ull-ti | | <u> </u> | <u>art-t</u> | |
| | | | _ | | Per | . : | | Per |
| | _ | 'Number of | | i | cent | | 1 | cent |
| | families | different | 1 | | in- | i | | iņ- |
| | | job titles | | : | croase | | 1 | crease |
| | | repre- | Num- | | | Num- | | i |
| | | sented | ber_ | cent' | 1964 | ber | cent | 1964 |
| 1 | Λ | | 1 | | | 1 | ; | |
| ⊥• | Agricultural Ma- | ! | ! | | | | | |
| | chinery Sales | | • | ; | | | 4. | . |
| 0 | and Service | - | _ | - | - | - . | . | - |
| ۷. | Agricultural | | | ; ! | | | | r., di |
| | Supplies and | | . 0.4 | | | | | : |
| _ | Equipment | 2 | 24 | . 8 | - | ; 1 | - | |
| ა. | Dairy Manufac- | 4 | • | ; | | 1 | <u>;</u> . | |
| | turing and | • | | | | | 1 | |
| | Processing | 1 | 1 | <u> </u> | . - | | : - | · - |
| 4. | Livestock Mar- | | | | | • | | * • • • |
| | keting and | • | | j | | | | |
| | Processing | l good | _ | | | _ | - | - |
| 5. | Other Livestock | i | • | İ | · | | | |
| | Industry | | . - | - | p== | - | : | - |
| 6. | Poultry | | •• | | · | . | | |
| | Industry | · - | - | - | | _ | - | |
| 7. | Crops Marketing | : | | , | | İ | | |
| | and Processing | - | • | | - | _ | _ | |
| 8. | Forestry and | | i | ; | | | | • |
| | Soil Conservation | 13 | 65 | 23 | 59 | 20 | .10 | 67 |
| 9. | Wildlife and Rec- | ! | 1 | | | | , | 1. |
| - | reation | 43 | 146 | 51 | 29 | 185 | 88 | 25 |
| 0. | Ornamental | - | | | | | ~ | |
| - • | Horticulture | 3 | . 3 | 1 | | 3 | . 1 | · |
| 1. | Farm | | i | <u>.</u> | | | . - | |
| -• | Service | ! | _ | , | : ! _ | i _ | · _ | _ |
| 2. | Agricultural | ; | : - | | _ | | . - | . – |
| | Service | 14 | 48 | 17 | 33 | 2 | , 1 | . 50 |
| | COT ATO | <u>.1.</u> als | <u> </u> | 1 1 | 00 | | · · · · | |
| | Totals | 76 | 287 | 100 | | 211 | 100_ | |
| ••• | Per school district | | 144 | menten er en en mengen | 32 | 106 | ; | 28 |
| <u> </u> | T GT BCHOOT GIBLITICE | | | <u> </u> | 1 04 | , TOO | | 40 |



TABLE XV

EMPLOYMENT OPPORTUNITIES OUTLOOK IN OFF-FARM AGRICULTURAL OCCUPATIONS IN TWO SCHOOL DISTRICTS IN THE ADIRONDACK AREA, 1965-69

| | | | Em | ploym | ent or | port | unities b | y year | rs | | |
|-------------|---------------------------------------------|----------|--------------------|--------------|------------------|----------|---------------|-------------|---------------------------|------------|-------------|
| | i den en en en en en en en en en en en en e | | 965 | | | | 1967 | | | 1 | 969 |
| Oc | cupational | Full | - Part- | Full- | Part | -!Ful | l-'Part- | Full- | Part- | 'Full- | Part- |
| <u>fa:</u> | milies ' | time | time | time | time | tini | <u>e time</u> | <u>time</u> | time | time | time |
| | | | | • | | | | | <u>,</u> : . | | |
| 1. | Agricultural | | 1 | | | | | | • | | |
| | Machinery | | , | : | | | | | i | • | |
| | Sales and | | | | | ٠ | | • | | | |
| _ | Service | - | | | | . = | | - | | | |
| 2. | Agricultural | · . | · | | | • • • • | , e company | | ganddaurenau ganer i d'ai | | |
| | Supplies and | | | • | | | | 1 | | | |
| _ | Equipment | 1 | ; * | , 1 | , * , | 1 | * | 1 | * | 1. | * * |
| 3. | Dairy Manu- | | | | | | | • | | | |
| | facturing and | | i | al. | | .1. | | . • . | | | |
| 1 | Processing | * | <u></u> | * | - | 米 | | * | · · | * | · - |
| 4. | Livestock | | ! | | | | | | | | |
| | Marketing | | | 1 | | | | • • • | ; | | ; |
| | and Pro- | | ; | | • | • | | • | ! | • | • |
| E | cessing | - | | | | _ | - | _ | | - | - |
| ວ. | Other Live- | | • | | • | | | .• | 1 | | |
| | stock Indus- | | : | | | | | | | | , |
| G | try | • | | | ; | ~ | | ! | i - | - | - |
| 0. | Poultry | | | | | | | | | | |
| 17 | Industry | | | - | _ | | | _ | | | - |
| 7. | Crops Mar- | | | | | | | | 1 | , | |
| | keting and | | | | ! | | | • | | | |
| 0 | Processing Forestry | - | ÷ | - | : - | p-4 | •• | - | - | | |
| 0. | and Soil | | • | | | | • | • | .! | • | |
| | Conservation | . 8 | 4 | 8 | . 1 | 8 | 4 | 0 | : 1 | , 9 | . 5 |
| 9. | Wildlife and | . 0 | . * 1 : | 0 | 4 | 0 | 4 | 8 | 4 | . <i>9</i> | 5 |
| 9. | Recreation | 15 | 25 | 15 | 26 | 16 | 27 | 16 | : : 00 | 17 | ່າວດ |
| 10 | Ornamental | Τ ε) | ۵0 | Τ. | | TO | 2.7 | 16 | 28 | 17 | . 29 |
| ΤΟ• | Horticulture | * | 1 | * | 1 | * | 1 | * | ; 1 | <u>*</u> | 1 |
| 11. | Farm | - | Τ. | - | Τ | • | Т | • | 1 <u>T</u> | | <u> </u> |
| ⊥ | Service | | | | | | | | | | |
| 12. | Agricultural | _ | - | | | 244 | 944 | ***** | , ets 1 | | |
| ⊥ ∠• | Service | 4 | 1 | 4 | 1 | 5 | 1 | 5 | 1 | 5 | . •1 |
| | DOL VICO | <u> </u> | <u> </u> | | <u>_</u> | | <u>+</u> | <u> </u> | <u>+</u> | U | |
| | Totals | 28 | 31 | 28 | 32 | 30 | 3 3 | 30 | 34 | 32 | 36 |
| | Per school | | <u> </u> | | | -, -, -, | | | <u> </u> | | |
| | district | 14 | 15.5 | 14 | ,16 | 15 | 16.5 | : 15 | . 17 | 16 | : 18 |
| | | | | | | 110 | | 1 1 0 | | | |

^{*} Less than one



Employment opportunities for full-time workers were highest in Wildlife and Recreation, Forestry and Soil Conservation and Agricultural Service. Opportunities for part-time workers were greatest in Wildlife and Recreation, and Forestry and Soil Conservation.

Agricultural Competencies Needed by Workers in Off-Farm Agricultural Occupations in Two School Districts in the Adirondack Area

The agricultural competencies cited by employers as most frequently needed by their workers are listed below for each occupational family. They are listed in rank order beginning with the one needed by the highest proportion of full-time workers in each occupational family. Only the top quartile of the rankings are listed. Complete lists may be found in APPENDIX E.

In the cases of Agricultural Supplies and Equipment and Dairy Manufacturing and Processing, it was impossible to follow this procedure because all of the needed competencies received equal ranking; therefore, all are listed with no inherent order.

AGRICULTURAL SUPPLIES AND EQUIPMENT

- 1. Use fire fighting tools and equipment.
- 2. Operate chain saws and other power equipment.
- 3. Maintain fire fighting tools and equipment.
- 4. Select, repair and maintain chain saws.
- 5. Keep essential records.
- 6. Know insurance and safety regulations.
- 7. Plan and arrange for advertising and promotion.
- 8. Handle inventories, stock control, warehousing reports, payroll, accounts.
- 9. Sell machinery, equipment, materials, products or supplies.
- 10. Make job estimates.
- 11. Pur chase goods to sell.
- 12. Hire, train and supervise workers.
- 13. Call on prospective customers.
- 14. Investigate and adjust customer complaints.
- 15. Display, explain and demonstrate items for sale.
- 16. Order repair parts and new equipment.
- 17. Use legal instruments: wills, deeds, contracts, mortgages, notes.
- 18. Keep, summarize, and analyze records.
- 19. Evaluate the total operation and make decisions.
- 20. Understand and use credit.
- 21. Comply with local, state and federal government trade and licensing regulations.
- 22. Provide for insurance.
- 23. Prepare tax returns.
- 24. Understand agriculture in our economy.
- 25. Select and buy farm machinery or garden tools, equipment, and machinery.
- 26. Select, buy, adjust or maintain lawn and garden sprinkler and irrigation equipment.



- 27. Operate, maintain and adjust gasoline engines.
- 28. Knowledge of blueprints, space requirements and building materials for agricultural structures.
- 29. Arrange, organize, and manage ar agricultural shop facility.
- 30. Knowledge of fuels and lubricants.
- 31. Planning for efficient use of buildings and equipment.
- 32. Install and use materials handling equipment.
- 33. Knowledge of paint and painting.

DAIRY MANUFACTURING AND PROCESSING

- 1. Manage streams and ponds.
- 2. Keep essential records.
- 3. Know public health laws.
- 4. Know insurance and safety regulations.
- 5. Manage camp grounds and trailer camps.
- 6. Hire, train and supervise workers.
- 7. Use legal instruments: wills, deeds, contracts, mortgages, notes.
- 8. Keep, summarize and analyze records.
- 9. Evaluate the total operation and make decisions.
- 10. Understand agriculture in our economy.
- 11. Plan, install and adjust water or sewage systems.
- 12. Knowledge of blueprints, space requirements and building materials for agricultural structures.
- 13. Concrete, masonry, and tile skills.
- 14. Planning for efficient use of buildings and equipment.
- 15. Install and use materials handling equipment.
- 16. Knowledge of paint and painting.
- 17. Housing and handling.
- 18. Feeding requirements and practices.
- 19. Sanitation and disease control practices.
- 20. Produce high quality products.
- 21. Knowledge of grades and standards.
- 22. Ability to test animal products.
- 23. Knowledge of markets and marketing practices.

FORESTRY AND SOIL CONSERVATION

- 1. Keep essential records.
- 2. Make job estimates.
- 3. Identify trees of economic importance.
- 4. Use fire fighting tools and equipment.
- 5. Operate chain saws and other power equipment.
- 6. Maintain fire fighting tools and equipment.
- 7. Detect and report forest fires.
- 8. Hire, train and supervise workers.
- 9. Operate, maintain and adjust diesel engines.
- 10. Read a topographical map.
- 11. Fell, trim, skid and haul logs and pulp.
- 12. Knowledge of fuels and lubricants.
- 13. Know insurance and safety regulations.



- 14. Understand agriculture in our economy.
- 15. Organize a fire crew.
- 16. Lay out, build and open woods roads.
- 17. Select, repair and maintain chain saws.
- 18. Knowledge of paint and painting.
- 19. Maintain trees and shrubs.
- 20. Scale and grade saw logs.
- 21. Handle inventories, stock control, warehousing, reports, payrolls, accounts.
- 22. Keep, summarize and analyze records.
- 23. Know public health laws.
- 24. Repair and maintain tree planting equipment.
- 25. Identify and control common insects and diseases.
- 26. Determine land use capabilities.
- 27. Order repair parts and new equipment.
- 28. Evaluate the total operation and make decisions.

WILDLIFE AND RECREATION

- 1. Knowledge of paint and painting.
- 2. Knowledge of fuels and lubricants.
- 3. Operate, maintain and adjust gasoline engines.
- 4. Farm carpentry.
- 5. Operate, maintain and adjust garden machines and equipment.
- 6. Plan, install and adjust water or sewage systems.
- 7. Use fire fighting tools and equipment.
- 8. Operate boats and motors.
- 9. Operate, maintain and adjust tractors, trucks, agricultural equipment and agricultural machinery.
- 10. Concrete, masonry and tile skills.
- 11. Operate chain saws and other power equipment.
- 12. Maintain and keep fire fighting tools and equipment.
- 13. Maintain and repair boats and motors.
- 14. Woodworking or metal working tool skills.
- 15. Keep essential records.
- 16. Fell, trim, skid and haul logs and pulp.
- 17. Know insurance and sarety regulations.
- 18. Order repair parts and new equipment.
- 19. Keep, summarize and analyze records.
- 20. Plan, install, repair and maintain electrical systems.
- 21. Detect and report forest fires.
- 22. Planning for efficient use of buildings and equipment.
- 23. Handle inventories, stock control, warehousing reports, payrolls, accounts.
- 24. Know public health laws.
- 25. Comply with local, state and federal government trade and licensing regulations.
- 26. Know game laws.
- 27. Evaluate the total operation and make decisions.
- 28. Identify trees of economic importance.
- 29. Understand agriculture in our economy.
- 30. Arc or oxy-acetylene welding abilities.



ORNAMENTAL HORTICULTURE

- 1. Mix soil composites.
- 2. Sterilize soil.
- 3. Prepare seed beds.
- 4. Select and use appropriate plant propagation methods.
- 5. Determine proper rooting medium.
- 6. Plant seeds, bulbs, trees or shrubs.
- 7. Perform proper tillage practices.
- 8. Design and make flower arrangements, corsages, floral pieces and Christmas decorations.
- 9. Maintain lawns.
- 10. Maintain trees and shrubs.
- 11. Provide seasonal protection for ornamental plants.
- 12. Harvest crops or plants.
- 13. Process, grade or package.
- 14. Shipping or storing.
- 15. Maintain and repair turf equipment such as mowers, fertilizer spreaders, and irrigation equipment.
- 16. Operate turf equipment such as mowers, fertilizer spreaders and irrigation equipment.
- 17. Sell machinery, equipment, materials, products or supplies.
- 18. Purchase goods to sell.
- 19. Display, explain and demonstrate items for sale.
- 20. Woodworking or metal working skills.
- 21. Operate, maintain and adjust tractors, trucks, agricultural equipment and agricultural machinery.
- 22. Operate, maintain and adjust gasoline engines.
- 23. Operate, maintain and adjust garden machines and equipment.
- 24. Construct and maintain greehouses be shouses, pathhouses, or toolsheds.
- 25. Knowledge of paint and painting.

AGRICULTURAL SERVICE

- 1. Know insurance and safety regulations.
- 2. Knowledge of paint and painting.
- 3. Operate, maintain and adjust gasoline engines.
- 4. Knowledge of fuels and lubricants.
- 5. Use fire fighting tools and equipment.
- 6. Operate turf equipment such as mowers, fertilizer spreaders and irrigation equipment.
- 7. Sanitation and disease control practices.
- 8. Operate chain saws and other power equipment.
- 9. Maintair fire fighting tools and equipment.
- 10. Maintain and repair turf equipment such as mowers, fertilizer spreaders, irrigation equipment.
- 11. Operate, maintain and adjust garden machines and equipment.
- 12. Maintain lawns.
- 13. Maintain trees and shrubs.
- 14. Know public health laws.
- 15. Organize a fire crew.



- 16. Control soil erosion.
- 17. Shipping and storing.
- 18. Read a topographical map.
- 19. Keep, summarize and analyze records.
- 20. Woodworking or metal working tool skills.
- 21. Keep essential records.
- 22. Maintain and repair boat coverings.
- 23. Make job estimates.
- 24. Use legal instruments: wills, deeds, contracts, mortgages, notes.
- 25. Evaluate the total operation and make decisions.
- 26. Plan, install and adjust water or sewage systems.
- 27. Knowledge of blueprints, space requirements and building materials for agricultural structures.
- 28. Farm carpentry.

Areas of Agricultural Competency Most Needed by Workers in Various Occupational Families

The five areas of agricultural competency - plant science; forestry, soil conservation and outdoor recreation; agricultural business; agricultural mechanics, and animal science - were weighted by annual employment opportunities per school district, using the procedure described on page 73, and the results were entered in TABLE XVI.

All of the 33 annual employment opportunities per school district were in occupational families where forestry, soil conservation and outdoor recreation; agricultural business, and agricultural mechanics competencies were needed. Ten annual employment opportunities per school district were in occupational families where plant science competencies were needed. Three annual employment opportunities fell in occupational families needing competencies in animal science.

Minimum Education Required for Off-Farm Agricultural Occupations in Two School Districts in the Adirondack Area

Employers reported that high school graduation was required for 37 per cent and that less than high school education was required for 11 per cent of the full-time workers in off-farm agricultural occupations in the two school districts. TABLE XVII. They also reported that post-high school technical education (not a degree) was required for 29 per cent of the workers, baccalaureate degree for 11 per cent, associate or junior college degree for five per cent, masters degree for five per cent and some college education (not a degree) for two per cent of the workers.



AREAS OF AGRICULTURAL COMPETENCY MOST NEEDED BY WORKERS IN SIX OCCUPATIONAL FAMILIES IN TWO SCHOOL DISTRICTS IN THE ADIRONDACK AREA - WEIGHTED BY ANNUAL EMPLOYMENT OPPORTUNITIES PER SCHOOL DISTRICT, 1969

| P. servatior Recreation No. No. No. comp. n. In. An. anp. mp. emp. emp. | 12 3 3 | 5 * 25 10 * 14 3 33 | 5 * 12 17 * 12 33 5 * 7 22 17 * 33 | 6 * 11 13 15 * 15 3 33 * 33 | * |
|---------------------------------------------------------------------------|------------------|--------------------------------------------------|------------------------------------------------------------------------------------------|-----------------------------|--------|
| and C Recreation H No. No. com comp. com p. emp. | 30 | 22 | 22 | 22 | |
| k P. Soil (Soil (No. No. Lin. Com) | 12 | * | * | | * |
| Ag. Sup. & Equip. No. ** comp. *** comp. *** emp. | | 6 1 | 18 | 9 1 | |
| Areas of | Plant Science | Forestry, Soil Conservation & Outdoor Rec. | Agricultural Business | Agricultural Mechanics | Animal |

** No. comp. = Number of competencies each of which is needed by 20 per cent or more of the workers in this occupational family.

*** An. emp. op/sch = Annual employment opportunities per school district in this occupational family.



'TABLE XVII

MIMIMUM EDUCATION REQUIRED FOR FULL-TIME WORKERS IN OFF-FARM AGRICULTURAL OCCUPATIONS IN TWO SCHOOL DISTRICTS IN THE ADIRONDACK AREA, 1964

| | | 1 | | | | | | | | | | | | | io | nal | far | ni | ilies | where |
|-----|-----------------------------------------|--------|------------|---------|-------------|-------------|--------|-----------|----------|------------|----------|-----------|----------|------------------|---------------|------------|----------|----------------------------------------------|------------------|---------|
| | | th | | _ | nin | | _ | | | | | | _ | | . | | | | | |
| | | s than | school | uation | High school | nation | t-high | ool tech. | no ded.) | oc. or jr. | . degree | e college | no ded.) | calaureat | ter's | i ee | tor's | ree | Not important | |
| | Occupational families | Less | high | grac | High | orac | Fosi | schc, | 9g. | Ass | SO 1 | Som | ed: (| Bac | Mas | deg | Doc . | Ged | Not imp | Total |
| 1. | Agricultural Mach- | • | | J | - | | - | | Ť | | J | <u> </u> | Ť | | | | | _ | | |
| | inery Sales and Service | | - . | | . | - | | <u>.</u> | | - | - | gat | | - | | | - | | - | |
| 2. | Agricultural Supplie and Equipment | | | | | - | | 100 | О | | • | - | | , page 11 | | : | | | - | 100 |
| | Dairy Manufacturing and Processing | | g:.0 | | • | - | - | | | 9~ | - | _ | | 100 | | _ | - | | - | 100 |
| | Livestock Market- ing and Processing | | - | | | - | | _ | ٠ | ر • | | | | - | | - | - | | - | - |
| | Other Livestock Industry | | - | | _ | - | | - | · | • | • | - | | _ | | - | - | | - | |
| | Poultry Industry | | - | | | - | | _ | | <u> </u> | • | | | - | | - : | _ | | - | |
| 7, | Crops Marketing and Processing | | | | | - | | - | | • | - | | • | 250 | | _ | _ | | - | Dank |
| 8. | Forestry and Soil Conservation | | 2 | | 43 | 2 | į | 37 | | 1 | L2 | - | | 7 | | gr: b | - | | _ | 100 |
| 9. | Wildlife and Recreation | | 18 | | 42 | 2 | | 12 | | | 4 | 1 | | 13 | | 10 | _ | | _ | 100 |
| 10. | Ornaments 1 Horticulture | | | | 34 | - | | - - | | | _ | 33 33 | • | :33 | | | | | _ | 100 |
| 11. | Farm | | | | | _ | | _ | | } | | | | | | | | •. | | |
| 12, | Service Agricultural | | ~ | | • | - | | | | | - | _ | | - | | | - | | - | -, |
| | Service | | 8 | <u></u> | 4 | 4 | _3 | 1_ | | - | - | . 6 | <u>}</u> | 11 | | | <u> </u> | <u>. </u> | - | 100 |
| | Per cent of all workers | | 11 | | 3' | 7 | 2 | 9 | , | - | 5 | 2 | | 11 | | 5 | | | - | 100 |



CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS FOR FURTHER STUDY

The following conclusions, implications and recommendations for further study were made and interpreted within the framework of the basic assumptions underlying the study and with due recognition given to the previously stated limitations.

A. CONCLUSIONS

Concerning School Districts Offering Instruction in Agriculture

- 1. Off-farm agricultural occupations are found in businesses or services with diverse functions. Although concentrated most heavily in service and retail sales, they are also found in manufacturing or processing, wholesaling, recreation, specialized agricultural production (other than farming) and education.
- 2. The job titles of most off-farm agricultural occupations can be found in the <u>Dictionary of Occupational Titles</u>. 13/ However, they are usually classified under headings other than agriculture.
- 3. There is a vast array of separate and distinct job titles in which workers use agricultural competencies. Two hundred and thirteen were identified in this phase of the study (plus 43 additional titles in the Adirondack area). The proportion of time devoted to the use of such competencies on the job varies widely with job titles. However, on the average, workers in off-farm agricultural occupations use agricultural competencies a high proportion of the time (in this study 83 per cent). The average for workers in the various occupational families vary but little in this regard.
- 4. The number of persons employed in off-farm agricultural occupations is substantial. It was estimated that 28,685 full-time workers and 16,841 part-time workers were thus employed in the 260 school districts offering a ricultural instruction during the school year 1963-64. On a per school district basis it was estimated that there were 110 full-time and 65 part-time persons so employed.
- 5. Although full-time workers in off-farm agricultural occupations are found at all levels of employment, they are most frequently found in semi-skilled, skilled and managerial positions. Part-time workers are most likely to be found in semi-skilled positions.
- 6. The number of persons employed in off-farm agricultural occupations is increasing. Employers' estimates indicate a growth rate of 19 per cent for full-time workers between 1964 and 1969, and a growth rate of 13 per cent in part-time workers during the same period.





- 7. The employment opportunities outlook in off-farm agricultural occupations is favorable. It is estimated that 14,085 full-time and 9,948 part-time employment opportunities will be available in such occupations during the five-year period 1964-69 in the 260 school districts studied. In view of the fact that no large urban areas were included in the study and that approximately one-third of the school districts in the State offer instruction in agriculture, it is entirely possible that several times the 4,807 employment opportunities found in this study will be available each year for the foreseeable future in New York. State.
- 8. When the areas of agricultural competency most needed by workers in the several occupational families are weighted by the annual employment opportunities per school district, it appears that training programs should emphasize the development of competencies in:
 - (a) Agricultural business and agricultural mechanics for prospective workers in all occupational families.
 - (b) Plant science for prospective workers in Crops Marketing and Processing, Forestry and Soil Conservation, Wildlife and Recreation, Ornamental Horticulture and Agricultural Service occupations.
 - (c) Animal science for prospective workers in Dairy Manufacturing and Processing, Livestock Marketing and Processing, Other Livestock Industry and Farm Service occupations.
 - (d) Forestry, Conservation and Outdoor Recreation for prospective workers in these fields.
- 9. A high school education is sufficient for full-time workers in the vast majority of off-farm agricultural occupations but advanced training is a definite requirement in some job titles. Employer reports indicate that only 17 per cent of such workers need more than a high school education. However, job titles such as county agricultural agent, teacher of agriculture and veterinarian require advanced training for entrance.

Concerning School Districts in the Adirondack A. ea

- 1. Off-farm agricultural occupations are found most frequently in businesses or services whose main functions are service, recreation or retail sales. However, they are also found occasionally in businesses or services whose main functions are education and specialized agricultural production (other than farming).
- 2. The job titles of most off-farm agricultural occupations can be found in the Dictionary of Occupational Titles. 14/ However, they are usually classified under headings other than agriculture.

14/ Ibid.



- 3. There is a vast array of job titles in which workers use agricultural competencies. Seventy-six such job titles were located in the two school districts studied in the Adirondack area. The proportion of time devoted to the use of such competencies varies widely with job titles. However, on the average, workers in off-farm agricultural occupations use agricultural competencies a high proportion of the time (in this study 88 per cent).
- 4. The number of persons employed in off-farm agricultural occupations is substantial. An average of 109 full-time and 83 part-time persons were so employed in the two school districts studied in the Adirondack area.
- 5. Full-time workers in off-farm agricultural occupations are found at all levels of employment but most frequently in semi-skilled, managerial and professional positions. Part-time workers are most likely to be found in unskilled, service and semi-skilled jobs.
- 6. Employment in off-farm agricultural occupations is increasing. Employers estimates indicate a growth rate of 32 per cent for full-time workers between 1964 and 1969, and a growth rate of 28 per cent for part-time workers during the same period.
- 7. The outlook for employment opportunities in off-farm agricultural occupations is favorable. It is estimated that there will be 314 (148 full-time and 166 part-time) employment opportunities in such occupations during the five-year period 1964-69 in the two school districts studied. An average of 31 annual employment opportunities (15 in full-time and 16 in part-time jobs) are indicated per school district; not counting employment opportunities outside of the school district.
- 8. Training programs for off-farm agricultural occupations in the Adirondack area should emphasize development of the agricultural competencies needed in three occupational families: Wildlife and Recreation, Forestry and Soil Conservation and Agricultural Service. The higheset priorities in such training programs should be placed on the development of appropriate competencies in the areas of agricultural mechanics; agricultural business, and forestry, conservation and outdoor recreation.
- 9. A high school education is sufficient for approximately one-half of the workers in full-time off-farm agricultural occupations in the Adirondack area. Employer reports indicate that varying degrees of advanced training are required for the remaining positions.



B, IMPLICATIONS

- 1. High school agriculture programs in New York State must be vastly expanded if the demand for workers in the off-farm agricultural occupations is to be filled with agriculturally trained individuals. Existing high school agriculture programs in the State are graduating approximately 1558 young men (1964). Of this number, approximately 431 enter farming immediately, 420 continue their education full-time in colleges or other schools, and 220 enter the armed forces. Approximately 487 are available to compete for the estimated 2817 annual employment opportunities in off-farm agricultural occupations in their own school districts; not to mention employment opportunities in school districts not offering instruction in agriculture or those in large urban centers. The Vocational Education Act of 1963 clearly states that "any amounts allotted ... for agriculture (instruction) may be used for vocational education in any occupation involving knowledge and skills in agricultural subjects whether or not such occupations involve work of the farm ... " 15/
- 2. The employment opportunities outlook in off-farm agricultural occupations provides justification for the inclusion of the agricultural program in the developing area vocational schools. For example, an area vocational school established in a non-metropolitan area of New York State, serving eight school districts, could anticipate approximately 152 annual employment opportunities (88 full-time and 64 part-time) for which graduates in off-farm agricultural occupations could compete within the area served, and a somewhat larger number in the Adirondack area.
- 3. The expanded agriculture program in area vocational schools in non-metropolitan areas should include training in agricultural business, agricultural mechanics and plant science; in addition to preparation for farming where needed. In the Adirondack area training programs should emphasize the needs of workers in Wildlife and Recreation, Forestry and Agricultural Service occupations.
- 4. The agriculture course of study in school districts presently offering instruction in agriculture should be expanded to provide greater opportunity for preparation for off-farm agricultural occupations.
- 5. Training programs for off-farm agricultural occupations should embrace the areas of agricultural competency most needed by workers in those families and groups of families of occupations in which the largest proportion of employment opportunities are found in the geographical area in which the school plans to place its graduates. The findings of this study suggest that the agricultural competencies needed by workers in the several job titles of closely related families of occupations are sufficiently similar to provide a logical core for instructional programs.

^{15/}Committee on Labor and Public Welfare, United States Senate, loc. cit.



- 6. The State Education Department should develop suggested courses of study in Agricultural Business; Agricultural Mechanics; Plant Science; Forestry, Conservation and Outdoor Recreation which are based on the agricultural competencies needed by workers in off-farm agricultural occupations. This material should then be made readily available for the guidance of school administrators, guidance counselors and other persons charged with responsibility for planning educational programs.
- 7. It is apparent that many school districts adjoining or near those presently offering instruction in agriculture are very likely to have employment opportunities in off-farm agricultural occupations which would justify offering agricultural instruction either on their own or as a program of a Board of Cooperative Educational Service.
- 8. Certification requirements and pre-service training programs for teachers of agriculture presently based on the needs of students pre-paring for farming should be revised in view of the competencies needed by workers in off-farm agricultural occupations.
- 9. In-service training programs for employed teachers will be needed to assist them in acquiring the essential competencies needed for implementing training programs in off-farm agricultural occupations.

C. RECOMMENDATIONS FOR FURTHER STUDY

Some of the urgently needed research in the area of off-farm agricultural occurations includes:

- 1. A study utilizing a sample selected in such a way that the researchers could make projections beyond the school districts offering instruction in agriculture.
- 2. A concentrated study of off-farm agricultural occupations in the urban areas of New York State.
- 3. Pilot programs to try out and refine training programs in a ricultural business; agricultural mechanics; plant science, and forestry, conservation and rural recreation for persons in off-farm agricultural occupations.
- 4. A study of work experience programs appropriate for persons in off-farm agricultural occupations.
- 5. The development of appropriate tests to determine aptitute for and interest in various fields of off-farm agricultural occupations.



APPENDICES

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APPENDIX A

EMPLOYMENT OPPORTUNITIES AND NEEDED COMPETENCIES IN OFF-FARM AGRICULTURAL OCCUPATIONS IN NEW YORK STATE

| | Date of Interview |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Interviewer |
| | FORM A |
| | |
| | Business or Service Information |
| Ins | ruction: Complete a FORM A for each business or service employing one or more persons (including proprietor) who need agricultural competencies. |
| I. | Name of Business or Service |
| | Address |
| II. | Name of Person Interviewed |
| III. | Telephone Number of Person Interviewed (Area Code) (No.) |
| | (Extension) |
| | DO NOT WRITE IN THIS SECTION |
| | School District Code Number |
| | |
| IV. | Business or Service Identification Number |
| v. | Main Function(s) of Business or Service. (Indicate by placing a l on the line preceding main function and a 2 on the line preceding secondary function, if any. |
| | 1. Retail Sales 2. Service 3. Manufacturing or Processing 4. Education 5. Wholesaling 6. Specialized Agricultural Production 7. Recreation 8. Other (list) |



EMPLOYMENT OPPORTUNITIES AND NEEDED COMPETENCIES IN OFF-FARM AGRICULTURAL OCCUPATIONS IN NEW YORK STATE

FORM B

SECTION I

| Inst | cruction: Complete a separate copy of this form for each and every different job title in which agricultural competencies are needed at each business or service establishment. |
|----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | DO NOT WRITE IN THIS SECTION School District Code Number |
| I. | Business or Service Identification Number (Must always agree with FORM A for this business or service - NEVER LEAVE BLANK) |
| II. | Occupational Family and Job Title |
| e Carlos de la companya de la companya de la companya de la companya de la companya de la companya de la companya | A: Occupational Family |
| en en en en en en en en en en en en en e | B. Job Title |
| ejante s u | (Use back of this page to describe this job) |
| | DO NOT WRITE IN THIS SECTION Job Title Code Number |
| | C. Level of Employment of this Job Title. Check (/) one. |
| | 1. Professional4. Clerical7. Skilled2. Managerial5. Sales8. Semi-skilled3. Technical6. Service9. Unskilled |
| III. | Outlook for Employment in This Job Title |
| | Number of EmployeesNumber of Years anEmploymentThis Expected FiveEmployee Usually StaysStatusYearYears from Nowin this Job Title |
| | Full-time 1. 2. 3. Part-time 4. 5. 6. |

DESCRIPTION OF JOB TITLE

| Lis | t of Duties of Employee - What | To Windows Does He Does Do Ti | He This Duty | |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------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| 1. | d Service and the sources regarded as a company of the company of the source of the 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| , | Instruction: Circle the numerous the most time: | mber above preceding the | duty to which he deve | otes |
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| | | To W Does | hat Where Is He This Duty | |
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SECTION II

Instructions:

- 1. Complete a separate SECTION II for each and every different job title in each occurational family the first time it is encountered.
- 2. Do not complete a se and SECTION II for the same job title in the same occupational family.
- 3. When you have completed SECTION II staple it to the completed FORM B, SECTION I for this job title in this business or service.
- I. Agricultural Competencies Weeded in this Job Title.
- Directions: 1. Circle the number preceding each of the following competencies needed by a typical employee holding this job title in this business
 - 2. White in additional competencies needed in appropriate blank spaces and circle the numbers proceding your additions.

Plant defende

- (27) 1. Earle soil for complete test.
 - 2. Perform ph or nutrient tests.
 - 3. 15 > lim or fertilizer recommendations.
 - 4. Programmend soil management practices.
 - 5. Decid: that to grow.
 - 6. Choose proper pleating sites.
 - 7. Mix soil composites.
 - 8. Sterilize soil.
 - 9. Select variables.
 - 10. Select seed, cuttings, bulbs or stock _l uts.
- (23) 11. Prepare spec bed.
 - 12. Select and use appropriate plant propagation methods.
 - 13. Determine proper rooting medium.
 - 14. Plant seeds, bulbs, trees or shrubs.
 - 15. Parmetta proper tillage practices.
 - 16. Control birds and animals injurious to Theats. (30)
 - 17. Control insects, diseases and weeds.
 - 18. Lange greenhouse, provide proper ervironment, forcing and shading.
 - 19. Manage nursery, planting, transplanting, pruning, shaping and trimming.
 - 20. Design and make flower arrangements, corsages, floral pieces and Christmas decorations.

- (29) 21. Knowledge of characteristics and appropriate use of landscaping materials.
- 22. Design landscaping plans to effectively use trees, shrubs, lawn, foundation plantings, vines and ground covers, annual and perennial flowers.
- 23. Correct physical defe ts of sites being landscaped.
 - 24. Locate and design drives, walks, fences.
 - 25. Establish lawns.
 - 26. Maintain lawns.
 - 27. Maintain trees and shrubs.
 - 28. Provide seasonal protection to ornamental plants.
 - 29. Harvest crops or plants.
 - 30. Process, grade or package.
 - 31. Shipping or storing.
 - 32.
 - 33.

 - 35.
 - 36.
 - 37. 38.
 - 39.
 - 40.



Forestry, Conservation and Rural Recreation

(33) 41. Identify trees of economic importance.(36)

42. Reforest an area.

43. Manage reforested area.

44. Manage Christmas tree plantations.

45. Select and mark trees for cutting.

46. Estimate volume and tree stands.

47. Identify and control common insects. and diseases.

48. Construct and maintain fire lanes.

49. Use fire fighting tools and equipment.

50. Detect and report forest fires.

(34) 51. Organize a fire crew.

52. Read a topographical map.

53. Scale and grade saw logs.

54. Fell, trim, skid and haul logs and pulp.

55. Operate chain saws and other power equipment.

56. Cut, bail, load, grade and haul Christmas trees.

57. Saw, grade, store and haul lumber.

58. Tap trees and operate maple syrup production equipment.

59. Control soil erosion.

60. Determine land use capabilities.

(35) 61. Repair and maintain tree planting equipment.

62. Maintain fire fighting tools and equipment.

63. Lay out, build and open woods roads.

64. Select, repair and maintain chain saws.

65. Maintain and repair turf equipment such as mowers, fertilizer spreaders and irrigation equipment.

66. Maintain and repair ski tows and lifts.

67. Maintain and repair boats and motors.

68. Identify economically important wildlife species.

69. Trap and control nuisance wildlife.

70. Provide habitat for bird and animal life.

71. Stock streams and ponds.

72. Manage wildlife in confinement.

73. Know game laws.

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74. Manage streams and ponds.

75. Keep essential records.

76. Know public health laws.

77. Know insurance and safety regulations.

78. Manage camp grounds and trailer camps.

79. Care for riding horses.

80. Know fishing and hunting skills.

(37) 81. Operate turf equipment such as mower, fertilizer spreaders and irrigation equipment.

82. Manage ski tow slopes and trails.

83. Layout and maintain hiking trails.

84. Operate boats and motors.

85. 86.

87.

88.

89.

90.

Agricultural Business Management Agricultural Mechanics 91. Plan and arrange for advertising and (44) 121. Select and buy farm machinery or garden tools, equipment and promotion. 92. Handle inventories, stock control, machinery. 122. Select, buy, adjust or maintain warehousing reports, payrolls, lawn and garden sprinkler and irrigation equipment. 93. Sell machinery, equipment, materials, 123. Woodworking or metal working tool products or supplies. 94. Solicit subscribers to various types skills. 124. Arc or oxy-acetylene welding of agricultural service. abilities. 95. Make job estimates. 125. Operate, maintain and adjust 96. Purchase goods to sell. 97. Supervise installation of equipment. gasoline engines. 126. Operate, maintain and adjust 98. Hire, train and supervise workers. 99. Call on prospective customers. diesel engines. 127. Plan, install and adjust water 100. Investigate and adjust customer or sewage systems. complaints. 128. Knowledge of blueprints, space requirements and building materials (41) 101. Display, explain and demonstrate for agricultural structures. items for sale. 129. Plan, install, repair and maintain 102. Order repair parts and new equipment. 103. Use legal instruments: wills, deeds, electrical systems. contracts, mortgages, notes. 130. Operate, maintain and adjust 104. Keep, summarize and analyze records. tractors, trucks, agricultural 105. Evaluate the total operation and equipment and agricultural machinery. make decisions. 106. Understand and use credit. 107. Comply with local, state and federal (45) 131. Operate, maintain and adjust government trade and licensing garden machines and equipment. regulations. 132. Arrange, organize and manage an 108. Provide for insurance. agricultural shop facility. 109. Prepare tax returns. 133. Farm carpentry. 110. Understand agriculture in our 134. Concrete, masonry and tile economy. skills. 135. Knowledge of fuels and lubricants. (42) 111. 136. Planning for efficient use of 112. buildings and equipment. 137. Install and use materials 113. 114. handling equipment. 138. Construct and maintain green-115. 116. houses, headhouses, pathhouses, 117. or toolsheds. 118. 139. Knowledge of paint and painting. 119. 140. 120. (46) 141. 142. 142. 143. 144. 143. 145. 146. 147. 148. 149. 150.

ERIC

| Animal Science (48) 151. Select and secure quality stock. 152. Housing and handling. 153. Feeding requirements and practice 154. Knowledge of breeding principles and practices. 155. Sanitation and disease control practices. 156. Keep production, breeding and financial records. 157. Use records to improve feeding, breeding and other practices. 158. Produce high quality products. 159. Knowledge of grades and standard 160. Ability to test animal products. | practices. 162. Cut meat. 163. 164. 165. 166. 167. 168. 169. 170. |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| | |
| II. Proportion of Time a Typical Worker the Agricultural Competencies Circl Directions: Record to nearest whole num Per Cent III. Essential Characteristics of Employe | ber. |
| · | |
| A. Minimum Educational Level (check | $x(\sqrt{\ })$ one only) |
| 1. Not important, | 6. Some college education (not a degree). |
| 2. Less than high school graduation. | 7. Baccalaureate degree. |
| 3. High school graduation. | 8. Master's degree. |
| 4. Post-high school techni education. (not a degree | |
| 5. Associate or junior col degree. | lege |
| B. Residential and Experience Backs | ground (check $()$ one only) |
| l. Farm | 3. Urban |
| 2. Rural, non-farm | 4. Not important |
| C. Leadership and Personality Qual- to successful performance on the | ities (check only those which are essential is job title). |
| l. Ability to accept and | carry out responsibility. |
| 2. Ability to meet people | graciously and discuss problems effectively. |
| 3. Ability in public speak | king. |
| 4. Ability to conduct a mo | eeting. |

| | C. | Conti | inue | £ | | | | | | |
|-----|---------|--------------------|------------|--------------------------------------------|-------------------|-----------------------|------------------------|-----------------------|---------------------|---------------------------------------|
| | | ************ | _5• | Attitude o | f loyalty | to emplo | yer. | | | |
| | | | 6. | Have initi | ative and | favorabl | e attitud | e towards w | ork. | |
| | | ب رود درود المالية | _7• | Ability to | give a de | monstrat | ion. | | | |
| | | | 8. | Acceptable | personal | grooming | and appe | arance. | | |
| | | | 9. | Ability to | get along | g well wi | th people | | | |
| IV. | Hou | ırs ar ØBERS | nd Wa | ages Common | to this J | ob Title | in thisB | usiness or | Service | (WHOLE |
| | | oloyme atus | | Average H Paid Per | | Average Paid Pe | | Wages Beginnin | Per Week g High | |
| | | Ll-tin ct-tin | | | · | 2. 6. | | 3: 7: | Annahan dayan ay | <u>4.</u> 8. |
| v. | How | vare siness | pers or | sons employers ervice? | ed <u>in</u> this | job tit | le usuall; answer.) | y given adv | ancement | in this |
| | | <u>_</u> | Sal | ary increas | ses only. | • | | i Ivana sin | | |
| | | 2. | Mor | e responsi | oility wit | hin this | job title | e only. | | |
| | - | 3. | Bot | th 1 and 2. | | | | e day daje de e da | | · · · · · · · · · · · · · · · · · · · |
| | | 4. | Pro | motion to | another jo | b title. | | | | |
| | | 5. | Not | given adv | ancement. | | • | | | |
| | -بريوات | 6. | Pro | prietor, de | oes not ap | ply. | | | | |
| · | | - | | | | | | | | |
| RE | MIND | | ines | ole to FORM s or service thing these | ce. Your | N I compi marks at | leted for the top | this job to | itle in s will a | this bus- id you in |



APPENDIX B

I. B. M. DATA CARD CODING FORMAT

| Column No. | | • • • • • • |
|------------------|------------------------------------------------------|-------------------------|
| 1-2 | School district code no. | |
| 3- 5 | Business identification no. | |
| 6 - 7 | Primary function of business | |
| 8-9 | Secondary function of business | • |
| 10~13 | J b title code no. | |
| 14 | Level of employment | |
| 15- 16 | No. full-time employees this year | ·. |
| 17-18 | No. full-time employees expected in five years | |
| 19-20 | No. years full-time employee stays in this job title | • |
| 21-22 | No. part-time employees this year | |
| 23-24 | No. part-time employees expected in five years | |
| 25-2 6 | No. years part-time employee stays in this job titl | e |
| 27-32 | Plant science competencies | |
| 33- 39 | Forestry, conservation and outdoor recreation con | npete nci es |
| 40-43 | Agricultural business management competencies | • |
| 44-47 | Agricultural mechanics competencies | |
| 48-50 | Animal science competencies | |
| 51-53 | Per cent of time spent doing these competencies | |
| 54 | Minimum education needed | • • |
| 55 | Residential and experience background | |
| 56 | Leadership and personality qualities | e 1- ordife gás -gin di |
| 57-59 | Full-time average hours paid per week | |
| 60 - 61 | Full-time average weeks paid per year | |
| 62-64 | Full-time wages paid per week (beginning) | |
| 65-67 | Full-time wages paid per week (highest) | |
| . 68 - 70 | Part-time average hours paid per week | |
| 71 - 72 | Part-time average weeks paid per year | |
| 73 - 75 | Part-time wages paid per week (beginning) | |
| 76- 78 | Part-time wages paid per week (highest) | ••• |
| :. + 79 | Way employee is usually given advancement | |
| 80 | | |



APPENDIX C

PREPARATION OF TABLES

TABLE II

PROPORTION OF TIME DEVOTED TO USE OF AGRICULTURAL COMPETENCIES IN TWELVE FAMILIES OF OFF-FARM AGRICULTURAL OCCUPATIONS

- 1. Mean "proportion of time ..." was computed for each job title.
- 2. Mean of job title means was computed for each occupational family using the number of workers in each job title as weights.

TABLE III

PROJECTED NUMBER OF PERSONS EMPLOYED DURING 1964 IN OFF-FARM AGRICULTURAL OCCUPATIONS IN NEW YORK SCHOOL DISTRICTS OFFERING INSTRUCTION IN AGRICULTURE, 1963-64

- 1. Projected 260 districts = (actual number/job title/type of farming X projection factor for type of farming)
- Number of school districts offering agriculture

 = in a given type of farming area

 Number of school districts in sample from the same type of farming area

Example: 180 school districts in dairy area = 45

TABLE IV

CLASSIFICATION OF FULL-TIME WORKERS IN OFF-FARM AGRICULTURAL OCCUPATIONS BY LEVELS OF EMPLOYMENT

- 1. Modal level of employment was determined for each job title.
- 2. Number of workers in each job title was plugged into TABLE II at modal level of employment.



TABLE V

CLASSIFICATION OF PART-TIME WORKERS IN OFF-FARM AGRICULTURAL OCCUPATIONS BY LEVELS OF EMPLOYMENT

Same procedure as TABLE IV

TABLE VI

PROJECTED NUMBER OF PERSONS EMPLOYERS PREDICT WILL BE EMPLOYED IN 1969 IN OFF-FARM AGRICULTURAL OCCUPATIONS IN NEW YORK SCHOOL DISTRICTS OFFERING INSTRUCTION IN AGRICULTURE DURING 1963-64

- 1. Projected 260 districts = Number of workers predicted by employers in each job title by type of farming X projection factor for type of farming.
- Number of school districts offering agriculture

 in a given type of farming

 Number of school districts in sample from the same type of farming area

TABLE VII

(See next page)

TABLE IX

MINIMUM EDUCATION REQUIRED FOR OFF-FARM AGRICULTURAL OCCUPATIONS

- 1. The mode for each job title was determined.
- 2. The number of workers in each job title was plugged into TABLE IX.
- 3. Numbers were converted to proportion.



TABLE VII

| | , | 1080 | 130 C+1 | 10 | | | | ' | | | | | | | | 288 |
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| Employment oppor | tunities by years | 1 087 | C+H C+H | | | | · · · · · · · · · · · · · · · · · · · | ······································ | | | | · · · · · · · · · · · · · · · · · · · | | a — verrite vitarejujustus | Harris y Farillian del may ger | 560 |
| Tvolar | ities | 1 068 | 5-10 | φ α | | | | 11.4 | | | | | | | | 547 |
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| a | | 1960 | 直(A+4C) E (A+5C) E (C+F) C+G | 6.0 | | | ANT ANTAL IS A | n (1) | | 1876dg (bd v | | | | | Photographic date rus was | 866 |
| II. | | 1.068 | (A+4C)E | 5.6 | | | | | | :+ ⁽ | | ·· '• | · - · - · | | <u> 11</u> 3 | 31.4 |
| by years H | | 1967 | (A+3C)自 | 5,2 | | | | | | | · • · | | | APP SAR | later Historia | 300 |
| Turnover by | n regere kylik sisse | 1566 | (A+C)E-(A+2C)E | 4.8 | | | Tending day of the | | | | . 1. 1. | * 7. | atron again o binnin again | · | |). 986 |
| F | | 1965 | (∆+C)E | 4.4 | <u>.</u> | | | | et te s | 4 | | | T - I - I - I - I - I - I - I - I - I - | en en | to the control entire terms | 646 |
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| Agricultural Machinery | Sales and | Service | Job Titles | 0101 | 0102 0103 | 0104 | 0105 0106 | 0107 | 0108 | 0110 | 0112 | 0114 | 0115 | 0117 | 0118 | Totala |

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APPENDIX D

COMPETENCIES NEEDED BY WORKERS IN OFF-FARM AGRICULTURAL OCCUPATIONS

- 1. Frequency of subscription to each competency by employers was tabulated by job titles.
- 2. Those competencies subscribed to by fewer than 50 per cent of employers were regarded as not needed by employees in a given job title.
- 3. In the case of these competencies subscribed to by 50 per cent or more of employers, the number of workers in each job title were plugged into TABLE VII.
- 4. Number was converted to proportion.



| Agricultural | Per cent of | Per cent of full-time worker | me work | NQ S | s by occupational | | onal families, nee | S. ne | ging this | Competency |
|--------------------------------|---------------------------------------|-----------------------------------------|-------------|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|----------------------------------------|-------|---------------------------------------|---------------------------------------------------------------------------------------------|
| competencies | Ξ | | (4) | - | (9) | | (8) | 6) | | (12) |
| Plant Science | | | | | | 1 | | | - | |
| 1. Sample soil for com- | | • ••••••••••••••••••••••••••••••••••••• | | , 184 | • • | | | | | • |
| plete test. | alender over | 2.4 | | 7.1 | *************************************** | 8.0 | 18, 1 | 3.2 | 40.5 | 22, 4 |
| 2. Ferform ph or nutrient | graft doors | | | | te ir neumalla nav | | , | • | | |
| tests. | Na Ampilona - | 2,4 | ***** | 7.1 | | 8.5 | 18, 1 | | 35,1 | 22.4 |
| 3. Make lime or fertilizer | | traker a a | | | | | | | | |
| recommendations. | * | 2.7 | | 7.1 | * | 8.5 | 27.3 | 3.2 | 54.2 | 23, 3 |
| 4. Recommend soil manage- | pur legica | | | | Belleri Aug Ju | | | | | |
| ment practices. | | φ. | | 7.1 | | | | | 38.9 | |
| 5. Decide what to grow. | 22. | 9 | | 7.1 | and an one pair . | 8.5 | 27.3 | 6.5 | | \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ |
| 6. Choose proper planting | | ··· I Williams | | | | | | • | | |
| sites. | | 4. | | 7.1 | <u> </u> | 0.2 | P- +++ | 6.5 | 54.2 | |
| 7. Mix soil composites. | | 4. | · | 7.1 | Terrent de la constante de la | | ************************************** | | | 1.6 |
| 8. Sterilize soil. | • •• | 2.4 | | 7.1 | | | 18,1 | | 26.7 | 4 |
| 9. Select varieties. | | 9 | | 7.1 | | 8.5 | ***** | 16, 1 | | 75 |
| 10. Select seed, cuttings, | - 1445 - 144 | into Anglian say | | | | | - | | | |
| bulbs or stock plants. | * | 2.6 | | 7.1 | .Ω <u>.</u> | 22.7 | 27.3 | 17.7 | 51,1 | |
| 11. Prepare seed beds. | Provi d prilificación de | 4. | · | 7:1 | | | က | 43, 5 | 86.3 | 23.2 |
| 12. Select and use appro- | orlidiazen sor | | | | | | -Berlit tree saft - | | | a rang april |
| priate plant propagation | • | | | · · · · · · · · · · · · · · · · · · · | | | • | • | • | |
| methods. | | 4. | | 7.1 | ************************************** | 8.0 | 27.3 | 8.1 | 40.5 | 1.9 |
| 13. Determine proper root. | | | | | | | (| | | elle son 11 cm |
| ing medium. | | 4. | | | | Mayor 4 ato \$44 | 18,1 | 6.5 | 40,5 | 1.2 |
| 14. Plant seeds, bulbs, | | · | | *************************************** | · · • • · boon | poděrta ne m og | | | • | |
| trees or shrubs. | • | <u>.</u> ص | oga edito a | | | 4.0 | 27.3 | 43,5 | 86.3 | ი შ |
| 15. Perform proper | ********** | a annuguria | | | | | • | | | |
| tillage practices. | • | 4 | 3,1 | 7.1 | | 8.5 | 27.3 | 45,2 | 86.3 | 23.0 |
| 16. Control birds and | <u>•</u> | | | • | · <u>.</u> | | • | | · · · · · · · · · · · · · · · · · · · | |
| animals injurious to | | - | | | willian rayunga ya | | | • | | |
| plants. | | 2.5 | | | | • | ardir service (in | 9.7 | 43,5 | 1.9 |
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Industry, (7) Crops Marketing & Processing, (8) Forestry & Soil Conserv., (9) Wildlife & Recreation, (10) Ornamental Horticulture, (11) Farm Service and (12) Agricultural Service * Key to occupational families: (1) Agr. Machinery Sales & Service, (2) Agr. Supplies & Equipment, (3) Dairy Manufacturing & Processing, (4) Livestock Marketing & Processing, (5) Other Livestock Industry, (6) Poultry

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| Acricultural | ., – | Plant Science (cont'd) | 17. Control insects, dis- | eases and weeds. | 18. Manage greenhouse, | · provide proper ena | vironment, forcing | and shading. | 19. Manage nursery, | . planting, trans- | planting, pruning, | shaping and trimi | 20. Design and make flower | arrangements | | . and Christmas | _ | 21. Knowledge of charac- | teristics and appropri- | ate use of landscaping | | | | · trees, shrubs, lawn, | foundation plantings, | vines and ground covers, | annual and perennial | • | 23. Correct physical defects | or sites belily lailuscaped. | | _ | | |

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| Per (| | | | at attagence. | ndrosta trus | ~ | | | ······································ | | | | . | | | ************************************** | | ، منه. | | | - | underson a trough | pamaki . | * *** : 2024; 4 | | | 1 | | - | |
| Agricultural | | Flant Science (cont'd) 27. Maintain trees and shrubs. | 28. Provide seasonal protection | coornamental plants. | 29. Harvest crops or plants. | Of Chimins of the or package. | 32. Warketing or storing. | 33. Knowledge of grains and | standards. | 34. Identify and control acquatic | 35. Knowledge of soil textures. | 36. Mix herbicides and insecti- | cides. | 3%. Control plants injurious to | | Forestry, Conservation and | Outdoor Recreation | 41. Identify trees of economic | importance. | 46. Neiorest an area. | 44. Manage Christmas tree | plantations. | 45. Select and mark trees for | cutting. | 46. Estimate volume and tree | stands. | 47. Identify and control common. | insects and diseases. | 48. Construct and maintain fire | lanes. |

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| (12) | | | φ. • | t- | J • • | 2.7 | 1.2 | | 1. Z | 6.0 | • | • 4 | 1.2 | | ار د د | | 2, | | 7.2 | • | | | • . | , | 7 | | | 1.8 |
| (11) (12) | | ************************************* | anggara dan sala sa agan | | , | | | | • | | t ordinapos n | * ************************************ | er-edesia elle el intro | na paraw enuh da | 1 | | | a en rephilosoft e re | * + th | | | - | | 1. | | | | |
| (10) (| | | | | randa i arte i gene | 7.6 | n e agus rapha | | ტ ი | 4.6 | entra e e | | | • | | 7 | 10.7 | - - - - | | • | | | • | (| 4.6 | | | 6.1 |
| ,) | • | | 40.3 | | | 21.0 | 8,1 | | 0 | 35, 5 | · • - | | · પ્ | 6 100gas un de | | 4. X | ~ ~ | | ر | | 8.1 | • | 7.6 | | 24.2 | | an Mily v sala | 27.4 |
| (8) | • | · ********** | 27.3 | • | 27.3 |) | 45,5 | (| /. 7.7/ | 72,7 | • | | 72, 7 | • | | 18.2 | • | • | 27.3 | • | 27.3 | | 72.7 | | 72.7 | | | 27 3 |
| (7) | | - | | | ninga- tanna | man arb s - m ar ar | o regula | Manuel F & Ga | | to record the | | at was | | estada yend | | | • | | | • | | | | : | | | | |
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| (3) | | | Quidiran ta sur Attegan | mino milino en e | | garther gu | aa a. 66 Ag <i>1988 g d</i> | a t Million of a Charleston | Polity or a first service of the ser | Mineraja dan Meri | a tar dilikin algur u | an gade a trouppe | rough - 1 or 14 through | alle allegge sepre par : | | m de des | u ramen | r nde fellener van | n regue d harad | b u - Arredisignu | rhe a children | ent an ula pap a | Austra direkty a | | - | | | |
| (2) | | an end fluide, and | angaria min kalija sama yan | Trave paid manual | nijk a menidogov _i ou um mij | | , | nggggagan kang | | | | | TO SALESCOPE IN SECURITION | anes que estre de + | anamiteria (Plagoria) | der en en en en en en en en en en en en en | liid amati liin | no-saulus per | • | • | | | | 1 | | | , | |
| (1) | | | | appendit politic tru e | | | | | | nuser sen | | | erragian bang | | | an an an an an an an an an an an an an a | - | | ****** | | | | · vertarense gran mai | | က | | | c |
| • Agricultural | Forestry, Conservation and | Outdoor Recreation (contra) 19 Use fire fighting tools and | • equipment. | 50. Detect and report forest | fires, | ol. Organize a tire crew. So Read a tonographical man | 53 Scale and grade gaw logs. | 54. Fell, trim, skid and haul | logs and pulp. | 55. Operate chain saws and other | 56. Cut, bail, load, grade and | haul Christmas trees. | 57. Saw, grade, store and haul | far Tan trees and operate maple | syrup production equipment. | 59. Control soil erosion. | 30. Determine land use capa- | . bilities. | 31. Repair and maintain tree. | planting equipment. | 52. Maintain fire fighting tools | sand equipment. | 33. Lay out, build and open | 34Select repair and maintain | chain saws. | 55. Waintain and repair turf | equipment such as mowers, | fertilizer spreaders and |

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| (11) | | | * | - Man-Manue Marie | • | | | F 1914 Statements | an first yay, magair i ar mad | ter alter ausgan inn. Der deltem | ulipuddies in Million (lipu) | | | - | | • | | | 1 | |
| (10) | | | • | • • | 4.6 | 1. 5 | | | · . | ം പ് | | 7.6 | | e e y sangtag | . a retire | | 7 | | | *** |
| (6) | | *************************************** | 32, 3. | 12.9 | 12, 9 | , | 22.6 | 9.4 | 35. 5 32. 3 | Геоге | | 77,4 | 51.6 | 1.0 | 27.4 | • | 62. | L | 600 | S |
| (8) | • | ngan ang ar at Ariberton managg | 27, 3. 3 | 27.3 | 27,3 11 | က | 27.3 2 | က | 27.3 3 27.3 3 | ကပ | ာ | 27, 3 | <u></u> . | | · · | reado a giralgian | <u> </u> | | | |
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| competencies | Forestry, Conservation and Outdoor Recreation (cont'd) 66. Maintain and repair ski tows | and lifts. Maintain and repair boa | and motors. | 68. Identify economically important wildlife species. | 69. Trap and control nuisance wildlife. | 70. Provide habitat for bird and animal life. | 71. Stock streams and ponds, | ment. | 73. Know game laws. | 5, Keep essential records. | of Know public nealth laws. | regulations, | 78. Manage camp grounds and trailer camps. | 79, Care for riding horses. | o, know itsning and naming skills, | 81; Operate turf equipment such | as mower, fertilizer spread- | ski tow sl | | 63. Legont and matthia hitting |

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| 11) (12) | 4 <u>,</u> ro | . | | 37.2 | 40.9 | ග ∞් | 31.8 21.8 | 14.6 |
| | | | | 25, 8 | 12.9 | | 38.7 16.1 5.5 | 6,5 |
| (10) | adala - a din dia ma ndra din din din din din din din din din din | | Projections of are a habitational budget as and participal follows in agreed to | 26.0 | 26.7 | 29.0 | 27. 42 34. 4 | |
| (6) (10) | 27.4 | | | 25.8 | 38.7 | 14.5 | 9.7 | 14.5 |
| 1 (8) | | | | 45.5 | 63.6 | 45.5 | 45.5 | 45.5 |
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| (4) (5 | | | | 30.2 | 21.9 | 16.7 | 25.0 13.5 | 10 |
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| (1) (1) | o. • | albert 1- ann a bha a Bhair Bhair an aide an Bhaire de Alaska, sa bha ann an am aine an an an an an an an an a | | 29.1 | 28.5 | 77.8 | 28.5 78.8 40.2 | 7 06 |
| competencies | Forestry, Conservation and Outdoor Recreation (cont'd) 84. Operate boats and motors. | 86. Give riding instruction. 87. Organize group games. 88. Organize entertainment. 89. Know and perform life- guard duties. 90. Determine water use capa- bilities. | Maintain and repair boat coverings. Layout and maintain bridle paths. | Agricultural Business Management 91. Flan and arrange for advertising and promotion. | control, warehousing re- | 95. Sell machinery, equipment, materials, products or supplies. | ious types of agricultural service. 95. Make job estimates 96. Furchase goods to sell. | 97. Supervise installation of |

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| Adricultural | rer c | | rull-time | \ <u>\</u> | à | occupational | . 1 | 딉 | es, nec | needing t | this com | competency |
| competencies | | (7) | (3) | (4) | (5) | (9) | (4) | (8) | 6) | (10) | (11) | (12) |
| Agricultural Business Manage- | | | | ***** | | | | | adana +a. | | | |
| ment (cont'd) | | | | | | | | | | | | |
| 98. Hire, train and supervise | | · | | ********** | | | | | ~ | • | | |
| workers. | 17.1 | 18.6 | 16.9146.9 | 46.9 | 67.9 | | 19,3 | 63,6 | 33,9 | 40.5 | 9.7 | 26.3 |
| 99. Call on prospective cus- | | | | | | | • | ٠ | | | one and the second | • |
| tomers. | 29.1 | 26.0 | 10,1 | 27.1 | 10.7 | | 21.0 | 45.5 | 12.9 | 33,6 | 54.8 | 58 . 6 |
| 100. Investigate and adjust | | | | • | • | W 191 (Marin.a | • | • | | | | |
| customer complaints. | 32,6 | 36.1 | 10.7 | 31,3 | 14.3 | | 21.0 | 45.5 | 32, 3 | 37. 4 | 61.3 | 63.6 |
| 101. Display. explain and dem- | | | | • | | esiń visije go s | , | | , | | | |
| onstrate items for sale. | 100 | 30.8 | 16.3 | 33.3 | 10.7 | | 14,8 | 45.5 | 22.6 | 30.5 | 29.0 | 54.9 |
| 102. Order repair parts and | | | Arribag on rea | •. | • | • · · · · · · · · | | | mpr relations | | | |
| new equipment. | 83.9 | 29.6 | 16.9 | 14.6 | 28.6 | *** | 16.5 | 45.5 | 41.9 | 32.8 | 35, 5 | 24.9 |
| 103. Use legal instruments: | | | | | | | • | | rivalih sagar sa da | | | |
| wills, deeds, contracts, | | | | | <u></u> | gande V Millede villen i | | | galway deliconstructural garage | no or! who | | |
| mortgages, notes. | 35.4 | 17.8 | 10.7 | 15.6 | 42.8 | | 23,9 | 45.5 | 4.6 | 33,6 | ပ် | 54.5 c |
| 104. Keep, summarize and | | | | | | enter in men | | | millionino hayo ng | graffig on global and the | - | |
| analyze records. | 65.5 | 29.2 | 55.6 | 15.6 | 57, 1 | | 23,9 | 63 . E | 17.6. | 28.2 | 58.1 | 69,8 |
| 105. Evaluate the total opera- | | | der digenerati | | | | B. C | | | ·************* | 20°-10-1-20-2 | |
| tion and make decisions. | 14.9 | 17.0 | 16.9 | 12.5 | 67.9 | - | 21.0 | 63,6 | 29.0 | 26.7 | 29.0 | 66, 3 |
| 106. Understand and use | | •. | 1400 as | | | | | | | . | | |
| credit. | 80.4 | 42.8 | 16.3 | 15,6 | 53,6 | 1907-1190 1 40- 1 | 24, 4 | 45,5 | 12.9 | 28.2 | 45.2 | 66.3 |
| 107. Comply with local, state | | | | | | alabaga ng sala | | | | | mader on his w | |
| and federal government | | | | | | Secure and Ad y | , . | | | | | |
| trade and licensing regu- | | | | | | pthic and a sidge — A | mater geleve na | | | - | | |
| lations. | 35,8 | 20.3 | 15.7 | 31,3 | 57,1 | | 26, 1 | | | | | 63.4 |
| 108. Provide for insurance. | 21.8 | 15.8 | 10.1 | 14.6 | 53,6 | hatta. gel ya gig i | 18.8 | 45.5 | 46.8 | 25.2 | 32, 3 | 64.6 |
| 109. Prepare tax returns. | 21.8 | 14.5 | 10,7 | 14.6 | 53,6 | | 18.2 | | | | 32, 3 | 35.4 |
| 110. Understand agriculture in | | •• | | | | | | | | , | | |
| our economy. | 29.4 | 23.6 | 17.4 | 34,4 | 57.1 | | 24, 4 | 63.6 | 3,2 | 26.0 | 45.2 | 52.7 |
| 111. Conduct surveys. | | • | | • | ! . | | | | | | | |
| 112. Organize and work with | : | | | | ·; | | | | | | | |
| committees. | : | · · | | | ; | : | | | | | | |
| 113. Public speaking engage- | | | | | | | | | | | | |
| ments. | | | | | | | | | | | | |
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| 11) (12) | | | • | • | | | • | • | 9 | • | - 8 | 2- | 5 2.1 | . (| 1 32.5 | 33.0 | วี | 1 32,8 | atorius cui phas | 12,1 | | • | | | 9-18.3 | , L | 15.4 |
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| (10 | | | | • | | | | • | 70 | | • | | 3 48 | | 20 17. | ى م | | 9 74 | • | 9 | 7 . | O O | ur, fau gia r · · | | 3 27 | 7 | تر <u>ا</u> تر |
| (9) | | • | • | • | | n plateren dikener | | | Ç | • | | | 32. | | 40, | T- | . | 62. | | - | | 777 | | : | | | ij |
| (8) | | • | ^ | • | | | | | רת רת | 45, 5 | | | 9,1 | • | | 7 | • | 54.5 | | 45.5 | • | | | | 45.5 | | 45.0 |
| (7) | | | , | • | | | • | | • | | | | | | | _ | 14. 0 | 20, 5 | • | 14,8 | _ | 14. X | | | 18, 2 | | 13, 1 |
| (9) | | | | | | Managadina et vu | | | | elegikasiya da sarijara | application to the same | | | | | | | s of the margine police | Marin Hayaraga a | | , | | | | | | |
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| (3) | | • | • | 1 | | | | • | | 9 | • | | | • | യ 4 | C | 77.7 | 0. | | 2.2 | | ن. 4 | | *************************************** | 23.0 | | 9 6 |
| (2) | , | • | | • | | | • | • | | 7, | | | 12.7 | | 39°3 | C | 33,0 | 64.3 | • | 43,8 | (| 2.7 | | | 39, 7 | | 17.7 |
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| . Agricultural competencies | Agricultural Business Manage- | ment (cont'd) | 114. Make appraisals. | ing to customers. | 116. Knowledge of marketing.) p. 117. Knowledge of grades and) o. | standards. | | Agricultural Mechanics | machinery or garden tools, | equipment and machinery. | 122. Select, buy, adjust or | enviole and invication | equipment. | 123. Woodworking or metal | working tool skills. | 124. Arc or oxy-acetylene weld- | ing abilities. | 125. Operate, maintain and | aujust gasomie englies. 126 Operate maintain and | adjust diesel engines. | 127. Plan, install and adjust | | 128. Knowledge of blueprints, | Space requirement and | | 129. Flan, install, repair and | mainta |

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| | Per cent | of | full-time | Work | ers by | occupational | tional | families | 4 | needing th | this com | competency |
| | (1) | (2) | (3) | (4). | (2) | (9) | (4) | (8) | (6) | (10) | (11) | (12) |
| cultural Mechanics (cont'd) | | • | | | • | | | | | | | |
| maintain and adjust | | | | , (a) | | | _ | | | | • | ٠ |
| ors, trucks, agricul- equipment and agricul- | | • | • | • | | • | | ********** | | register — W stant frilliger (| | - |
| | 62.0 | 37.3 | 30.9 | 5.2 | 7.1 | | 29,0 | 54.5 | 54,8 | 54.2 | 61,3 | 33, 7 |
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| | 45.3 | 14.1 | • | 1 | • | | 12, 5 | | 53, 2 | 73,3 | 41.9 | 10,3 |
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| | 16.1 | * | • | • | 7 1 | • | | | ć | nh nga faling kasan | ע | ر |
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| | | 10,2 | 3,4 | | 7.1 | | 13, 1 | | 43, 5 | 18,3 | 400000000000000000000000000000000000000 | 10,9 |
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| | 61.7 | 26.8 | 7,3 | 5.2 | 7.1 | | 17.0 | 45.5 | 43, 5 | 42.0 | 9.7 | 32, 9 |
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| | 1,3 | 7.2 | 15.7 | | 7,1 | | 15. 0 | 54.5 | 25.8 | က ် | ල ව | 14,4 |
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| | | | 14.0 | | | | | | 9.7 | | | 1,2 |
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| Agricultural | Der Ce | ent of fi | full-time | e workers | 5, | occupal | ational | | es. needing | ling thi | s compet | etency |
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| | ' _ | 10 | (3) | 1 | 5 | (9) | (2) | 1 | | $\cdot \cdot$ | 1 | (12) |
| Agricultural Mechanics (cont'd) | 7. | ì | | 7 | | | | | | | | |
| . 🗆 | | | | | - | | • | | | | | • |
| working machines. | • | | | | • | | • | | | | | |
| 146. Blacksmith skills | | | | | | | | | | .• | • | |
| (farrier). | A | | | | | | | | | | | |
| 147. Know how to load and | | | | | - Printeriores | | | | | • | | • |
| unload machinery (from | ***** | | | | | n au delini eri | | | | | - Table - Tabl | |
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| Animal Science | | | • | | • | | • | . • | | | | . • |
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| trol practices. | | 4 | ರಿ ಬ್ |)) () | 0 | ဂံ | | | | | • | - H |
| 156. Keep production, breeding | | L | 7 | | | | | | | | о В | 0 |
| and financial records. | | <u>.</u> | | 1.2.5 | 92. 92. | - · North | • | | က် က | ດ ດັ່ | | |
| 157. Use records to improve | • | | | | | | | | | | • | 74 ••• |
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| practices. | • | Σ | LO. | 17.0 | , co | | · | | 7°° | | • | |
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| products. | | ∞ | 34.8 | 12.5 | 96. 4 | 33° 3 | | - | ر د د | | 14.3 | o. |
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| standards. | | ∞. | 7.07 | 63. b | 96. 4 | | | | | ກ ວ | 14.8 | Մ |
| 160. Ability to test animal | | • | . (| L C | : (| | : | : | | | 0.0 | ۍ 1 |
| products. | | 4. | ρ.c | | OO-T | | | ; ; | | | , | • |
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| marketing practices. | |) H | + • • | 47.9 | • • | | • | | 3.2 | | | |
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| families, needing this competency (8) (9) (10) (11) (12) | | | | | | | | | |
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| Fer cent of full-time work (1) (2) (3) (4) | | | | | and they repairs a selection | | e skuurdide eeds | | |
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| Agricultural | Animal Science (cont'd) 163. Pasteurize milk. | ce che ese. e ice cream. | Transferring livestock (legal). | Interpreting records (classification). | Operate bottling machines. Ability to grade and | candle eggs. Operate debeaking equip- | ıt. | 1. Shoe horses. 2. Clip horses. | |
| | Animal 163, Past | 164. Mak 165. Mak | 166. Transfe (legal). | 167. Inter (cla | 168, Ope 169, Abil | | ment. | . ∺ % | : |

AFFEL DIA E

COMPETENCIES NEEDED BY WORKERS IN OFF-FARM AGRICULTURAL OCCUPATIONS IN TWO SCHOOL DISTRICTS IN THE ADIRONDACK AREA

| Agricultural | Per cent of full-time workers | of fu | 11-ti m | e work | cers by | dnooo | occupational | families | 4 | 124 | this competency | petency |
|----------------------------------|-------------------------------|-------|---------|----------------------------------------|---------|---------------------------------------|------------------|--------------|------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| competencies | (1) * | (2) | (3) | (4) | (2) | (9) | S | (2) | 69 | 10T. | (11) | (177) |
| Plant Science | | | | | · . | ···· | | - | | | | |
| 1. Sample soil for complete | | | | | | 1 0 F am vi + 1 7 v + 1 | | 17.1 | <u>ග</u> | . 66. 7 | | 2.8 |
| 2. Perform oh or nutrient | | | | | | | | ·•··• | | | | |
| tests. | | | | | | | | | <u>.</u> | 66.7 | wayyuka wal | % % |
| 3. Make lime or fertilizer rec- | | | | | | | | 2 | | <u> </u> | Manager C. A. | 0 |
| ommendations. | | | | | | | - | ر. د | - D | | | |
| 4. Recommend soil management | | | | | | | | C | C | 20 | and the same of th | |
| practices. | | | | | *** | | | 4, c | , o o | o o o o o | | |
| 5. Decide what to grow. | | | | | | | | 7.0 | | | | |
| 6. Choose proper planting sites. | | | | · · · · · · · · · · · · · · · · · · · | | | | . 30° 1 | • | , c | | οα |
| 7. Mix soil composites. | | | | , | | anger to anger | | 1.6.1 | | 3 5 | D-1/240-4 | , ο α -8 |
| 8. Sterilize soil. | | | | p48 - 10 mbm | | | . • | T • C G G | C | ન ((| a. ab | οα |
| 9. Select varieties. | | | | . avaderkrett | | | | | • | | | _ |
| 10. Select seed, cuttings, bulbs | | | | 9 | | | · 4 | 7 | | 6.8 | | |
| or stock plants. | • | | | den e ord ref | | - | | 1.0 | O | | | i o |
| 11. Frepare seed beds. | | | | ······································ | | Programa a | | | 0 -i | | | • |
| 12. Select and use appropriate | | | | , 22 0- | | | ~~ ~~ | | 0 | 100 | | % % |
| plant propagation methods. | - | | | | | water or other | | | | | | _ |
| 13. Determine proper rooting | | | | automito mo | | | | 0.5 | Mark of State on | 100 | | |
| medium. | | | | pho no ne tredi | | | | н <u>.</u> | ··· | 3 | | _ |
| 14. Flant seeds, bulbs, trees | | - | | | | | Man mound | 30 | 0 | 100 | • | |
| or shrubs. | | | | | | | - | _ | • | | | |
| 15. Perform proper tillage | | | | | | | | | 2.7 | , 100 | | 2,8 |
| practices. | | | | - | | | | - 2 2 | - | • · | | |

^{*} Key to occupational families: (1) Agr. Machinery Sales & Service, (2) Agr. Supplies and Equipment, (3) Dairy Manufacturing & Processing, (4) Livestock Marketing & Processing, (5) Other Livestock Industry, (6) Poultry Industry, (7) Crops Marketing & Processing, (8) Forestry & Soil Conserv., (9) Wildline & Recreation, (10) Ornalindustry, (7) Crops Marketing & Processing, (8) Forestry & Soil Conserv., (9) Wildline & Recreation, (10) Ornalindustry, (7) Crops Marketing & Processing, (8) Forestry & Soil Conserv. Industry, (7) Crops Marketing & Processing, (8) Forestry & Soll Consmental Horticulture, (11) Farm Service and (12) Agricultural Service.

GOMPETENCIÈS NEEDED BY WORKERS IN OFF-FARM AGRICULTURAL OCCUPATIONS IN TWO SCHOOL DISTRICTS IN THE ADIRONDACK AREA

| Agricultural | Per cent | o U | II | rkers | by occur | occupational | familie | es. nee | needing this | 11 | competency |
|-----------------------------------|-----------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------|------------------------------------------------------------|----------------------------------------|---------------------------------------|--------------|--------------|----------------------------------------------------------------------------------------------------------------|------------|
| competencies | (1) | (2) | | | 1 | (2) | (8) | ري | | 1. | (12) |
| Plant Science (cont'd) | | | | | | | | | | | |
| 16. Control birds and animals in- | | | r bear | - | | | | | | | v |
| jurious to plants. | | | | | - | 40 vagggers a | 19,5 | <u>ග</u> | | | 5.6 |
| 17. Control insects, diseases | | | n dant san | · | ··········· | | | | | ************************************* | |
| and weeds. | | litik e da regile ye. | **** | | ***** | ••••• | 36.6 | 5.3 | 1 26.7 | - | 4 |
| 18. Manage greenhouse, provide | tran († 1804) 1800 – Paris III. | | | | ** #** - · · • | D Orley pag | | | • | | • |
| proper environment, forcing | ne Panadaig | ra g i vising | | - | | Mar troppeda | | P-178 04- | | | |
| and shading. | errende as . | | | t terrorena | | | 17.1 | | . 66. 7 | v Adatus | |
| 19. Manage nursery, planting, | | Base - 4 * 4 * 4 * 4 * 4 * 4 * 4 * 4 * 4 * 4 | | Service de la capa- | *···· ** | ****** | • | - main its | • | | |
| transplanting, pruning, | ************************************** | | | ···· | | ** ** * ** | • | | | - | |
| shaping and trimming. | in agrae all agricum agrae agr | ar a sa sa sa sa sa sa sa sa sa sa sa sa s | nenga stren en | | ·•···································· | **** | 41.5 | | 68.7 | | |
| 20. Design and make flower arr- | | | | • | | . ~ | • | | • 1 | - | |
| angements, corsages, floral | | | fra ere illi tuation (| | | | | | | • | |
| pieces and Christmas | Militure d | | W Calledon Agen | | | | | | | • | • |
| decorations. | | | * -~ <u>-</u> | | | | | | 100 | ٠ | - 8 |
| 21. Knowledge of characteristics | | · | • • • • • • • | | | dada | · · · · · · · · · · · · · · · · · · · | | | | 7 - |
| and appropriate use of land- | The same of a | | *************************************** | * * * *** | <u>.</u> | ** *** | | | | | |
| scaping materials. | | | | | | -/ 64 19 3 00 | 22.0 | 11,5 | 66.7 | - . | 5,6 |
| 22. Design landscaping plans to | • | | | | | ······································ | يون ښت و الله | - | | | |
| effectively use trees, shrubs, | | | | | n-1 1-20- | • | | | | - | |
| lawn, foundation plantings, | - | | - | | 1 ., <u>1113111-</u> - 18 | • | h:- w | | | | |
| vines and ground covers, | | | | | and the second of | | • •• | | | <u></u> | |
| annual and perennial flowers. | nagyar yakir d | | - | | .,,,,,,, | | 22.0 | | 66.7 | . Present the | . 8 . 8 |
| 23. Correct physical defects of | | terim antibosa — d | | | *** • ** • • • • • • • • • • • • • • • • • • | | | | | • • | |
| sites being landscaped. | *************************************** | | | *************************************** | out is required on | n - t-dh-sus t-t- | 22.0 | 11.5 | 33, 3 | | 2,8 |
| 24. Locate and design drives, | | | | - | | · ····· | | | | en Marie de la companya de la companya de la companya de la companya de la companya de la companya de la compa | |
| walks, fences. | | | | | | | | <u>م</u> | ကံ | | |
| 25. Establish lawns. | | | | | . | ·** | 22.0 | 1.8 | 33, 3 | | 8 |
| 26. Maintain lawns. | • | | <u>.</u> | · · | • | | | 1. | 100 | | |
| 27. Maintain trees and shrubs. | | • | • | • | : : | i i | 51.2 | 2.7 | 100 | ************ | |
| 28. Provide seasonal protection | | : | · | :. :: :: :: | | | | | | | |
| to ornamental plants. | -, | | | ~~ . | · · · · · · · · · · · · · · · · · · · | | | Transmire wa | 100 | | 2.8 |
| 29. Harvest crops or plants. | | • | | : | | | 19,5 | | 100 | | |
| 30. Process, grade or package. | | | | •••••••••••••••••••••••••••••••••••••• | · | | | | 100 | | |
| | | | | - | | | | | | | |

COMPETENCIES NEEDED BY WORKERS IN OFF-FARM AGRICULTURAL OCCUPATIONS IN TWO SCHOOL DISTRICTS IN THE ADIRONDACK AREA

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| competency 11) (12) | | 36, 1 | • | 9 | nga k haraba y | • | | | . | | -{ | 33- | 19,4 | | ೲೲಁ | | χ, N | ς. α | | φ • | | o G | α | | 03°0 | | 22, 2 | 38,9 |
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| this con (11) | | | nome grant | | ₩¥- ₩ ₩. | 6. | | | | | Market de la composición | | | | | | | | | | | 60 , - 60 68'-50 | pd-n-t-region (| ******** | | B-1-4 | | **** |
| needing th | (| 100 | | | | | | | | • | | | 3 3, 3 | | | | | | | | | 00. | | | | | a- ta -a- | |
| 15 | · | • | • | | | | | | | • | _ | | | 15.9 | | | , , | 18 | | 9.7 | |). •).T : | 1 90 4 | • | 61.9 | • . | • | 29.2 |
| families (8) | | • | • | | • | • | ·. } | | 777 | | • | | 80, 5 | 24,4 | | | Z0. X | רכי רכי | • - | 31.7 | | 45° C | 7 | | 80.5 | | 70.7 | 63,4 |
| | | - | THE BUY THE A | •- | | | | | | | | | | | - ··· | | | | | | الشادة بدر وي <u>د</u> | | | pr ant/1000-11 | | : : | | |
| occupational (6) (7) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| pd (s | | PPARTE OF THE STAT | (1 000) - 1 - 10 - 14 (14) | | Line delenies make min 181 | 1 Add - 180 - 200 - 1 | e describis un | | · | | ************************************** | | | | | | | | | , I. pu | | | | | , | : | | endedon e d |
| workers (4) (5 | | | | | alaba a un a com | | | | ** *********************************** | | | | | | | | | | | | | | | | | | | |
| full-time (3) (| | | | 1984 A | | and the second | | areas or co | | | | | | | | | | | • | - Magazini | , agen to ave | . • | | | | | - underending | |
| cent of ful | | - . | | | | | | - | | a distributor grado - com | t time and | | | | • | The second of the state of | | *** | | | | . | <u> </u> | | С. | 3 | *************************************** | |
| Per cen | | regularisanda in | ************************************** | | | *************************************** | *************************************** | | • | edit - ear rear- ed | Min in in Luder . | | · d-gara | ••• | | THE PARTY WATER | | ones median | ******* | . .• | | 16.00 == | | nginu etë Allin | | | | |
| • | Plant Science (cont'd) | 31. Shipping or storing. | 32. Warketing grains. | standards. | 34. Identify and control acquatic | plants. | 35. Knowledge of soil textures. | 36. Mix herbicides and insecti- | 37. Control plants injurious to | animals. | Forestry, Conservation and | Outdoor Recreation | 41. Indeptily trees of economic importance. | 42. Reforest an area. | 43. Manage reforested area. | 44. Manage Christmas tree | plantations. | 45. Select and mark trees for | cutting. 46. Estimate volume and tree | stands. | 47. Identify and control common | insects and diseases. | 48. Construct and maintain fire | lanes. | 49. Use fire fighting tools and | equipment. 50 Detect and report forest | fires. | 51. Organize a fire crew. |

COMPETENCIES NEEDED BY WORKERS IN OFF-FARM AGRICULTURAL OCCUPATIONS IN TWO SCHOOL DISTRICTS IN THE ADIRONDACK AREA

| . Agricultural P | er cent | φjo | full-time | le Workers | cers by | occupationa | tional | families | ∦ . | needing this | н | Competency |
|----------------------------------|-----------------------------------------|--------------------|---------------------|-----------------|------------------------------|-------------|---------------------------------------------------|--------------|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|----------------------|
| . competencies | (I) | (2) | (3) | 1 | \mathbf{H} | (9) | (4) | (8) | 1 | | | (12) |
| Forestry, Conservation and | | | | | | | | | | | 7 | (77) |
| Outdoor Recreation (cont'd) | | | | | | | - | ·· • | | The state of the s | | |
| 52. Read a topographical map. | en i edd | | | *************** | Menska i stad | | | | 28.3 | 33, 3 | • | |
| 53. Scale and grade saw logs. | r han marand | Total Tax | | T-100011 | | | | 48,8 | | - | | 5.6 |
| 54. Fell, trim, skid and haul | | | • | | 100 100 | | | | | | | |
| dind par sbol . | *************************************** | | | | | **** | · Pro codedido septem po | 68, 3 | 45.1 | • • | | % 8 |
| 55. Operate chain saws and | to an exemple . | | | | | | • • « « | 1 2 44 8 | ******* | en deser house | | |
| other power equipment. | | 52 | | | | | * Pripagan, | 78.0 | 53,1 | 66.7 | | 55,6 |
| 56. Cut, bail, load, grade and | • | - | • | | | | • • • • • • • • • • • • • • • • • • • | *** | | | | |
| haul Christmas trees. | | • | | | •••• | | | 19,5 | ထ | | - | 2.8 |
| 57. Saw, grade, store and haul | | | | | | | ***** | | • | | en en en en en en en en en en en en en e | |
| lumber. | | | | | | | | 19,5 | 14.2 | | | 19,4 |
| 58. Tap trees and operate maple | | , | | | • • • | | holio pap ap | | • | | , | • |
| syrup production equipment. | | | | man f s - | ****** | | , | | 14.2 | | | ω |
| 59. Control soil erosion. | | • • | | , | ····· | | n pages i gen | 26.8 | | 33, 3 | | တ ို့ တွင် |
| 60. Determine land use capa | 5 - mbarra er e | | | | | | 1 0 000 1100 | | 4 | 4 | ************ | |
| . bilities. | | | | | | | - 20 mg at \$6_000000 . | 43.9 | 21.9 | 66.7 | | 5.6 |
| 61. Repair and maintain tree | | | | | - | | | | • | ***** | | • |
| planting equipment. | **** \$10 1.0 | · | | | n de est : etc | | ger Mell Hijlacom | 46.3 | 10,6 | | | 2.8 |
| 62. Maintain fire fighting tools | | | • | | | | | | | | · · · · · · · · · · · · · · · · · · · | |
| and equipment. | | 25 | * | | | - | | 73.2 | 48.7 | | | 55.6 |
| 63. Lay out, build and open | era vanak | | ****** | , | erstage dar grafte | | | | | | | |
| woods roads. | *************************************** | | | | The Street and Street Street | | | 58, 5 | 23.0 | | | 8. |
| 64. Select, repair and maintain | 8 * 1988 | L | | | | | | | | | | |
| Chain saws. | e e cama i para region | C2 22 | 1, 18mm 1 | | | | | 58. 5 | 26.5 | | | 22.2 |
| oo. Maintain and repair turi | | • ••• | •• | | | , | | · | | | | • |
| equipment such as mowers, | n e estada activada | as and our re | ••• | • | | | | - | | · · | | |
| rertilizer spreaders and irri- | 1000 TO 1100 | | | | | | | | | (| | |
| gation equipment. | ; · · · | | | | | | | 22.0 | 0.7 | 100 | ••• | 55.6 |
| oo Maintain and repair ski tows | | | | | | | | | Ċ | • | | ر ا |
| and litts. | | : | | | | | | ; ; ; | ာ ထိ | | | ဝီ |
| of Maintain and repair boars and | | and the second | ambreu e e sud | | | | **** | 1 7 | 2 | | <u>:</u> | α • |
| motors. | | adjugation had the | e and a manifest of | | | | | ກໍ | • | | | • |
| | oderskin- ag a | | | | • | | | | *************************************** | | | |

COMPETENCIES NEEDED BY WORKERS IN OFF-FARM AGRICULTURAL OCCUPATIONS IN TWO SCHOOL DISTRICTS IN TFE ADIRONDACK AREA

| (11) (12) | · | 2°.8 | 2,8 | , 8 . 8 | · | | ကို ကို ကို လ | | 0. | | | % 7 | | 58,3 | 5.6 | | ∞ 4. | | |
|--------------------------|--------------------------------------------------------|------------------------------------------------------------|------------------------------------------|----------------------------------|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------|-------------------------------|----------------------------------------|--------------------------------------------|-------------------------------------------|---------------------------------|----------------------------------------------------------|---------------------------------|--------------------------------|------------------------------------------|-------------------------------------------------------------|--------------------------|
| (10) | | ************************************** | en e en en en en en en en en en en en en | | . u | | . ന ന ന | • | . ် ် က က က | | | | | 100 | garden statele stat ur, ur e | | | | |
| s, neecind (9) (10 | | 25.7 | 29.2 | 20.4 | က် | 13° 3 | 17.7 | 35.4 | 44.2 | 25.7 | 4.4 | 23.0 | and the second second | 12.4 | 1.8 | , 30 30 | • | က | |
| (8) | | 17.1 | 7.3 | 17.1 | 7, 3 | 7, 3 | 00.2 | 46.3 | 65.9 | | • 1 | 29.3 | | 24.4 | e eagle thin i .v. | 6 | 39.0 | | ···• |
| (6) (7) | | an er <u>malle sent er tre</u> n er en er | Prioring a sequilibri | ada su suaderr t | | ruinan 1450e / | • . | · · · · · · · · · · · · · · · · · · · | | | | مين د س | ger e de second | n a paradin 1 - 100. | and the second | | | | |
| (4) (5) | | | | | | e per de la companya | m domes storage | denotes a some po es d | | daldiru faqifindin (* | | g. saja sidentilikkin () — () till side | angen I m | appe Berleitsbelle-gap | | · ser Allanter | | | |
| tull-time wor (3) (4) | | | | en-relina se a cristal | | | 100 | 100 | 100 | | 2 | garaghaph tringgaran | | | | | | | |
| c cent or 1) (2) | | : | relikada kipa, marr, sedar | nd falling en et e e | e distrigation taken | TO I AND AND THE STREET | No. 1 | C | 25 | ************************************** | · · · In was | | | - spiritus di di di di di di di di di di di di di | dar of dee of their major | | | | |
| . Agricultural E | Forestry, Conservation and Outdoor Recreation (cont'd) | 68. Identily economically 1m- portant wildlife species. | 69. Trap and control nuisance wildlife. | 70. Frovide habitat for bird and | 71. Stock streams and ponds. | ment. | 74. Manage streams and ponds. | 75. Keep essential records. | 77. Know insurance and safety | 78. Manage camp grounds and | trailer camps. 79. Care for riding horses. | 80. Know fishing and hunting | 81. Operate turf equipment such | as mower, fertilizer spreaders ond irritation equipment. | 82. Manage ski tow slopes and | 83. Layout and maintain hiking | trails. 84. Operate boats and motors. | 85. Maintain riding trails. 86. Give riding instruction. | 87 Organize group games. |

COMPETENCIES NEEDED BY WORKERS IN OFF-FARM AGRICULTURAL OCCUPATIONS IN TWO SCHOOL DISTRICTS IN THE ADIRONDACK AREA

| Agricultural | Per | cent of f | full-time | e workers | ers by | occupational | tional | families | | needing this | 1 | competency |
|-----------------------------------|-------------------|---------------|---------------------------------|-----------|------------------|--------------|--------|----------------------------------------|---------------------|----------------|-------------------------------------------------------|------------|
| competencies | (1 | (2) | (3) | | HO. | (9) | (4) | (8) | 15 | (10) | (11) | (12) |
| Forestry, Conservation and | | | | | | | | | | | | |
| Outdoor Recreation (cont'd) | | | | | | | | ***** | | | aboth spitting | • |
| 89. Know and perform lifeguard | · | | | | | | | | | 81 Mile franci | | • |
| duties. | Barrison de la | . • • • • • • | | | | | | | - | - | | I¥. • |
| 90. Determine water use capa- | - Markey Brown - | • | <u></u> | | | | | | 0 | • • | | • |
| DILITIES. | | | | | | | | • | o . | | · | • |
| 1. Maintain and repair boat | • . mad prilinage | | e ev the states | | and the same | | | - | ognation (), , , , | an en eus | | |
| . coverings. | ******** | | پر میں د م سی <u>ة دوران</u> | - | , | | | | • | • | | 33.3 |
| 2. Layout and maintain bridle | | | odkore observis | | | | | · ···································· | • | , | | • |
| paths. | | | na magazor y ch | | adalant mp | | | n | | | | • |
| Arminithmal Business Manage | | | | and store | | | | desire and sign at the | | | , *a. | |
| mont | | | | | | | | , | | , | | |
| Ment. | | | | | ** ** *** | | | • | | · . | | ~ ; |
| 91. Flail aild allailye lot adver | <u>.</u> | 95 | r ight a sighter that on | | etengalaj spraje | | | 0 7 | 20 4 | 66 7 | | 1 0 40 |
| CISTUR and promidential | - | 2 | | | | | | | 2 2 4 | • | | |
| 92. Handle inventories, stock | | • | | na sunda | | | | | | | •• | |
| control, warehousing reports, | | | | | | | | | • | | | 0 |
| payrolls, accounts. | | 22 | | | | | | χ. 2. 2. 3. | 30.3 | | **** | 8.1.7 |
| 93. Sell machinery, equipment, | | | S h i Yangganani | - | | | | | | | *** | |
| materials, products or | warder gland | • | | | | | | | | (| | , |
| .supplies. | to propose the | 25 | - | | · | | | 4.9 | 4,4 | 100 | miko v spilono | 14:0 |
| 94. Solicit subscribers to var- | | | | | | | | | THE TO | | | |
| ious types of agricultural | | | | | | , , , , | | | • | | ··· + • · · | |
| service. | | | | | | | | | | | * * - * * ***************************** | × o |
| 95. Make job estimates. | | 25 | | | | - | | _ | | | agus sabr dari sa | က် |
| 96. Purchase goods to sell. | | 25 | | <u> </u> | | | | 4.0 | 14.2 | 100 | | 14.0 |
| 97. Supervise installation of | | | | | · · | | | | | | · var · · · · · · · · · · · · · · · · · · · | |
| equioment. | | | : | | | | : | 24, 4 | 22, 1 | 33°3 | | 11.2 |
| 98. Hire, train and supervise | | | | | | ! | | | | • | · !: | |
| workers. | | 25 | 100 | | | | | 70.7 | 31.0 | က္ခ | | 25.0 |
| 99. Call on prospective cus- | | | | o, | | | | | . (| . (| | |
| tomers. | | 22 | | | | | | 19,5 | 2.22 | , •99 | | က ကိ |
| | | : | | | | | ٠. | | | 12 | | |
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COMPETENCIES NEEDED BY WORKERS IN OFF-FARM AGRICULTURAL OCCUPATIONS IN TWO SCHOOL DISTRICTS IN THE ADIRONDACK AREA

| competency | (12) | • | | 27.8 |) . • | 19,4 | | 16.6 | | | 30.6 |) •) | 36 1 | | ď |)2- o « |) | | 22. 2 | 22.2 | 22.5 |] | 13.0 | 8 8 | | 2,8 | · · · · · · · · · | ω ∞ | ., | | | | rysta dski sa | ، دود کیوند | |
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| - 1 | (11) | | | | 1 | a tree age or | | | - Wang ang ang ang ang ang ang ang ang ang | | | | | | | | ungen ger | ,, | | | · • - | - 1 de - | | | | | | ~ . | | : | | | ar areas qualifies | te spegmen | . |
| ling this | (16) | • | , | 66.7 | • | 100 | : | 66.7 | • | | 33.3 | • | 6 6 6 | • ' | 7 20 | | • | | 66 7 | - cc | | • | | • | | - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - | •• | 1 | | | | | n skraffe a 15, sa | oppo vije dgri | And Marke |
| 4 | (6) | , | | 30.1 | | 14.2 | • | 42.5 | • | ···· | 21.9 | • | 7 | • 1 | 71 00 | . 00. . 0 | | | 24 5 | • △ | • 4 | | 31.9 | • | | 2.1010-101-1 | معد ودردو | | | 1 | | | **** *** - *** | | , |
| families | (8) | • | • | 9, 98 | • | 12.2 | | 43,9 | • | | 8 96 E | • | 0 | • ' | | 45. 0.00 | • | | 7. R | | o o | | 85 95 | | mare din Fr | , order on | | mandy was a d | | | | 1 | | · · | |
| اب | (2) | | | | | 100 m 100 a | . د خو خو خ | | | 6-a4-80- | | | | | | | | | | | r - 1001 | | . was 14 Mil | | ga ya yasan kar | n: 12 15 16 | , g de- | page sign par co | | | | | ****** | | - tua desar- |
| occupationa | (9) | | | | | | | | | | | | | | ••• | <u>-</u> | | | | • | | · | | | ······································ | ير د د د د د د د د د د د د د د د د د د د | | · · · · · · · · · · · · · · · · · · · | | · · | | | | ···· | |
| workers by | (2) | | | T | | | | | | and handlessey see a | | | | | | | + s ter | | 474), -4 74 | | - | | arab da saftan | | | - | | ** ********* | | ! | | 1 | , upukon ekakumi | ı. | |
| | (4) | | | | , | | | | ·~ | | | | | | | <u>-</u> | | , a - a-ma | | odno rojami | | nguy der skille | ga minipiliko en e | , | | | | | | | | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | andraidena a l | | |
| full-time | (3) | | | L | | | | - Marie Lan | ··• · | ******* | <u> </u> | 3 | (| 00T | | 100 | | | | | | • - | (| 100 | | , | | | | : | | * . | | · · | ميمس |
| cent of fu | (2) | | | C U | CZ | 25 | D | | 7 3 | Teatre (mallione | L. C | 22 | L (| | · | 25 | 25 | no postanti di Sala | t. (| | C Z | 22 | L G | CZ Z | - . | | | | | | | | ng pang 1 - 4 | ٠ • ، • ، • • | ***** |
| Per ce | (1) | | | | | ologovsky o a s t, | المشارك ميونا م ي | | na, redis sa r | · · · · · · · · · · · · · · · · · · · | nar . nasada f | - | · · · · · · · · · · · · · · · · · · · | | | | - | | | | | .p. w. stalleland | | brok pro A Malali | | - v | . h . = 1400a | in the same and same | | | | | a. /1 bahara | ~ 1 140 / 10 10 10 | o o o o o o o o o o o o o o o o o o o |
| Agricultural | competencies | Agricultural Business Manage- | | Ľ. | 1 7 | 101. Display, explain and demon- | Strate Herris Ior Sale. | 102. Order repair parts and new | edupment. | 103. Use legal instruments: | wills, deeds, contracts, | yes, notes. | 104. Keep, summarize and | analyze records. | 105. Evaluate the total opera- | tion and make decisions. | | Comply with local, state | federal government trade and | licensing regulations. | | 109. Prepare tax returns. | 110. Understand agriculture in | our-economy. | 111. Conduct surveys. | 112. Organize and work with | . committees. | 6.3 | ments. | 114. Wake appraisals. | 115. Know principals of deliver- | ing to customers. | nowledge | 11''. Knowledge of grades and 'G | standards. |

COMPETENCIES NEEDED BY WORLERS IN CFF-FARM AGRICULTURAL OCCUPATIONS IN TWO SCHOOL DISTRICTS IN THE ADIRONDACK AREA

| (11) (12) | • | % % | | 19.4 | 36.1 | ц С | O O | 66.7 | - ႐ <u>ှ</u> | | 30° e | • | as W | 30,6 | [| 27.8 | | • , | 22.2 | <u>.</u> | 22.0 | | 0°0° | 25.0 |
|--------------|-------------------------------------------------|-------------------------------------------------|------------------------------|------------------------------|-----------------------------------------------|-------------------------------|----------------------------------------------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------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| (11) | | | . garde v | | | * ** | | | | - | | | | | | | | de e company and | responsible description | | *************************************** | | | |
| 9). (10) | | 66.7 | | 66.7 | 100 | | ************************************** | 100 | The state of the s | | 66.7 | · · · · · · · · · · · · · · · · · · · | | 33,3 | (| က္ | , | | 100 | ((| 100 | (a) | 33. 3 | |
| (9). | | 15,0 | • | 10.6 | 48.7 | 3 | 31. 9 | 70.8 | 11.5 | • | 61.9 | | | 31.0 | | 38,1 | | | 60, 2 | (| 0. 79 | ic ; | 64.6 | 57 5 |
| (8). | | 22.0 | | 17.1 | 22.0 | | 24. 4. | | 70.7 | | 2. 4. | • ,, • ••• | | d | | 2.4 | p. gu, p. p. . e | • | 34, 1 | | 24.4 | | 17.6.1 | 36 6 |
| (6) (7) | | - | | | - | par geografia y d'el persona. | an-ganer - a shap sup | 1886 a 188 1 | · Sauger Londliker | | re opina pa | | ······································ | | •••• | a n. t ngulina | ******** | 10° 1° and | nden as end de Million. | | · · · · · · · · · · · · · · · · · · · | | | |
| | 4. | · · · · · · · · · · · · · · · · · · · | | Bayes arrange maken | op u. ≠ .ps eem .ep | | | ap a session | /1 | an arrow | ****** | | | ti sygmen - | مد د جوه می | ين جو | o yaza-saan | | g dan rety | | S SSSS - Fire man dereck | | | Newson and |
| (5) | | | | | MA - pan-to intelliged | | · \$14 \$140 - 1446 | • •• | | | C 11F on pag | and the same of th | enge o - e est ét | | 110 - 10 - 100 | | | , | | | | | | ***** |
| (4) | | | | | | proposition and | ······································ | , and the different | , , , gasan agganah tala taga | | | | | | | | | -111 - -1 11 - -1 11 | ***** | and the second s | | | | |
| (3) (4) (| | | · , | | | | t t | | Bridge - 1 yankir Mirrey | Dennis de + Sili | 100 | liga and the effects of | frage regardate. | 100 | | | er eine geskriftli | | | - | | | | <u> </u> |
| (2) | | <u>ල</u> වා | | . 25 | Ann va Aggilja ist sansa | | | 25 | gagan-aut versus | ©r stanosir-€ | P (B) ggs. | | | 25 | | ¥ | : | B. Sall (1804-19-19 | na diament of the diament | 1-10-10-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1 | 1 | 25 | | |
| | | | | | ************************************** | ****** | | | · <u>·</u> | | | | The same of the sa | | منتدون | · ···································· | *************************************** | | · | · · · · · · · · · · · · · · · · · · · | <u>n</u> . | <u>ම</u> ් | | |
| competencies | cultural Mechanics Select and buy farm mach- | inery or garden tools, equipment and machinery. | Select, buy, adjust or main- | In lawn and yar ven sprander | Woodworking or metal work- ng tool skills. | Arc or oxy-acetylene weld- | g abilities. Operate, maintain and adjust | asoline engines. | 126. Operate, maintain and adjust diesel engines. | Plan, install and adjust | ater or sewage systems. | Knowledge of blueprints, | sace requirement and build- | y ilicteriais tor agricater. Tretures. | Plan, install, repair and | naintain electrical systems. | 130. Operate, maintain and adjust | estors, trucks, agricultural | juipinent and agricultai iachinerv | Operate, maintain and adjust | urden machines and equipmer | 132. Arrange, organize and manage an agricultural shop facility. | Farm carpentry. | Concrete, masonry and tile |
| • . | Agric 121, S | in | 122, S | i. | 123 . \ in | 124. | in 125 <u>.</u> (| , 5 | 126. (| 127. I | 3M | 128. F | SK | ost St | 129. I | m. | 130, | TI. | ec. | 131. (| 36 - | 132, / | 133, 1 | 134. |

COMPETENCIES NEEDED BY WORKERS IN OFF-FARM AGRICULTURAL OCCUPATIONS IN TWO SCHOOL DISTRICTS IN THE ADIRONDACK AREA

| Acricultural | Per ce | cent of f | full-time | e workers | ers by | occope | cupational | familie | s. ne | eding th | <u>S</u> | competency |
|-----------------------------------|----------------------------------------------|---------------------|------------|-------------|-------------------|----------------------------|------------|----------------------------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|------------|
| competencies | | (2) | (3) | 1 | HC) | (9) | (2) | (8) | (6) | 11 | | (12) |
| anics | | | | | | | | | | | | |
| 35. Knowledge of fuels and lub- | | *** | | | | | | | | | | |
| ricants. | | 25 | | | | | | 68.3 | 70:8 | 66.7 | | 66:7 |
| 36. Planning for efficient use of | | | | | | | - | | | , | | |
| buildings and equipment. | - Marker . | 25 | 100 | | | | | 34.1 | 37.2 | 33,3 | | 25.0 |
| 37. Install and use materials | | ·*** | | | | | | ag comes | · | | | |
| . handling equipment. | · · · · · · · · · · · · · · · · · · · | 25 | 100 | | | | | 22.0 | 18,6 | • | | 25,0 |
| 38. Construct and maintain | | | | | | | | Ma Grovação have | | | <i>.</i> | |
| greenhouses, headhouses, | Makester supp. sup | | | ~ | | | | - | | | | |
| pathhouses, or toolsheds. | | | | | | | | 17.1 | 17.1 | 100 | ··· | 22, 2 |
| 39. Knowledge of paint and | ······ | | | | | | | | March | | | |
| painting. | ······································ | 25 | 100 | | | | | 58,5 | 91.2 | 100 | | 69.4 |
| 40. Knowledge of hydraulic | | | | . • | | | | | ● | | · <u>-</u> . | * |
| systems. | no materia | | | - | | | | | <u>ං</u> | | | 2,81 |
| 11. Use a transit, etc. | | .a - a - | | *** | | | | တ ထ | | - | | 94. |
| 12. Knowledge of refrigeration. | - | | | | 1 WING 1 - P WING | | | | e ya Makini | | | • |
| 143. Knowledge of types of | hought-space de | ma 8g -raum 8 | | • | | | | | | ********* | | |
| metals. | ************************************** | | ~ | **** | | | | | | 14T4 V-1444. | | |
| 4. Use micrometers. | مرجوب منتوبت | | | | | | · | • | . | -1 | | |
| 5. Set up and operate metal | · Politic, <u>inc.</u> | | | - | | * ** B ** | | | | ** Do. Shows a fe | | |
| · working machines. | | | | - | | | | • | | | - | |
| 16. Blacksmith skills (farrier). | | · | | - | • | | | ************************************** | ω ω | | | |
| 17. Know how to load and un- | *** ********************************* | | | • • • | | . ••• | • | ب است | r | • | | • |
| load machinery (from | | | • | e granima d | | | | | | | | |
| Vanicles). | | | | | | | | | • | | | |
| ٠ | | | | | | | | | , | | | • |
| Animal Science | ., | | | and Strong | | • | ٠ | | | | | |
| or belect and secure quantly | | | | | , . | *** | • | | | | · NA | α c |
| STOCK. | | 1 | | | | | · | , <u>r</u> | 7 C | · - 4 |) | 0.0 |
| 152. Housing and handling. | | | 001 | | | | | O. | ง้ำ | and the same of th | , | 3 |
| no recally requirements and | | | 100 | | • | | | .23 | 15.0 | | | 8 |
| 154. Knowledge of breeding prin- | | |)) | | | - 1-1-1-1-1-1-1 | | | • | idh . 4 ber dap ₁₀₀ | | |
| () | | | | | | | | 7.3 | 9.7 | | | |
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COMPETENCIES NEEDED BY WORKERS IN OFF-FARM AGRICULTURAL OCCUPATIONS IN TWO SCHOOL DISTRICTS IN TEF ADIRONDACK AREA

ERIC AFULL TEXT PROVIDED BY ERIC

| Agricultural | Per cent of | full-time | Workers | S hy oc | Callo | tional fa | families | กคคผ้ากก | this o | omnetenov |
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| competencies | (1) (2) | (3) | (4) (-) | | (9) | -l | 3 | (6) |) (O | (12) |
| al Scie | | | | | | - | | 5 | 721 | (DT) |
| 155. Sanitation and disease con- | | | | | | | | | ······································ | |
| trol practices. | | 100 | | - | | | | 7.1 | and the se | 58.3 |
| 156. Keep production, breeding | | | | | | - | ************************************** | | ** ************************************ | |
| and financial records. | | ora and an angelo | ·- •• | | | | | တ • | ·. ••• • | |
| 157. Use records to improve | - | ******* | e december | | | Transport of the second of | n i wan dada | | · | |
| feeding, breeding and other | 4 6 4 . | | • | | • 6 - 100 | | | | | · · · · · · · · · · · · · · · · · · · |
| practices. | a salah di | | November 1 and 1 | · · · · · | | ~ | 7.3 | <u>ි</u> | ng, taige - | tes segirange |
| 158. Froduce high quality pro- | | () | | | rifer (Cha trus d) | riffyri hyfirigan | ***** | | -4- ₉₋ | |
| cucts. | | 00T | | | | | | က | * ** | χ. Χ. |
| 159. Knowledge of grades and | | () | | | *************************************** | | | | ogen ? | |
| standards. | • | 100 | eve to-ex | | erior a gan a' au | | - | က | ₽ ₩,t≥ | ထ လုံ |
| 160. Ability to test animal | | | | - | •••••••••••••••••••••••••••••••••••••• | | • • | | . | |
| products. | | 100 | | | regio altérn | B (*********************************** | • | 12,4 | | ω, ∞ |
| 161. Knowledge of marifets and | | | | | | **** | | , <u></u> | | 93 |
| marketing practices. | | 100 | | | au rettra , s | | | 4.4 | | - 2° 0 |
| 162. Cut meat. | | | · · · · · · · · · · · · · · · · · · · | | | | 7.3 | | • | |
| 1.63. Pasteurize milk. | | | | | | | ••••• | <u> </u> | | *************************************** |
| 164. Make cheese. | The state of the s | e region and | | | **** | | *** ***** | ma r w a | hr na gusa | Buddens waster |
| 165. Make ice cream. | - America | norman mumu | | | | | | | reference - reserve | · residence |
| 166. Transferring livestock | | * | | | + | | | | ****** ******************************* | |
| (legal). | - Towns of the second | dellaray a d | • | | | alka raja aras | re stein in mad | | Mer dilirens | *************************************** |
| 167. Interpreting records | | | | | u / s s sum der redden. | | | eteden tennhage | ing at the safe of | |
| (classification). | | | | | ••• | | ···· | | ***** | |
| 168. Operate bottling machines. | | | | . | · · · · · · · · · · · · · · · · · · · | | · villerlang.g | rbe squa | to a section | |
| 169. Ability to grade and candle | | | | · | gunge + Andi | | - | · · · · | ssa - are | |
| eggs• | | | | | | | • ••••• | **** | | |
| 170. Operate debeaking equip- | | | | | • | | | ng digar sala sa a | • | |
| | | | | | nga - ar cano - a cana | | - | | - | - |
| 1. Shoe horses. | | | | | | * | | Politica in April | PEP STATES (STATE) | Marketon angles an es |
| 2. Clip horses. | | | | | · · · · · · · · · · · · · · · · · · · | Pagaloo q | | - , | | ************ |
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